101.11 5-4320-256-14

TM 5-4320-256-14

TECHNICAL MANUAL

RETURN TO

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS PUMP ASSEMBLY, FLAMMABLE, LIQUID, CENTRIFUGAL, SELF-PRIMING, GED, 2-IN., 100 GPM (AMERICAN AIR FILTER INC. MODEL FARE 3950)

FSN 4320-427-0002

This copy is a reprint which includes current pages from Changes 1 through 6.

HEADQUARTERS, DEPARTMENT OF THE ARMY
NOVEMBER 1974

CHANGE }
NO. 6 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 January 1987

Operator, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools

PUMP ASSEMBLY, FLAMMABLE, LIQUID, CENTRIFUGAL, SELF-PRIMING, GED, 2-IN. 100 GPM (AMERICAN AIR FILTER INC MODEL FARE 3950), NSN 4320-00-427-0002

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Operator, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools

PUMP ASSEMBLY, FLAMMABLE, LIQUID, CENTRIFUGAL, SELF-PRIMING, GED, 2-IN. 100 GPM (AMERICAN AIR FILTER INC MODEL FARE 3950), NSN 4320-00-427-0002

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6-1 and 6-2	6-1 and 6-2
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1. Remove and insert pages as indicated below.

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Chapter 3	3-1 thru 3-2.1	3-1 thru 3-2.1/3-2.2
Appendix C	C-3 thru C-6	C-3 thru C-6

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C 2

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Operator, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools

PUMP ASSEMBLY FLAMMABLE, LIQUID CENTRIFUGAL, SELF-PRIMING, GED, 2-IN. 100 GPM (AMERICAN AIR FILTER INC MODEL FARE 3950), NSN 4320-00-427-0002

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Operator, Organizational, Direct Support, and General Support Maintenance Manual Including Repair Parts and Special Tools
PUMP ASSEMBLY, FLAMMABLE, LIQUID, CENTRIFUGAL, SELF-PRIMING, GED, 2-IN, 100 GPM (AMERICAN AIR FILTER INC., MODEL FARE 3950)
NSN 4320-00-427-0002

TM 5-4320-256-14, 15 November 1974, is changed as follows:

1. Throughout the manual, all reference to "Federal Stock Number (FSN)" is changed to read "National Stock Number (NSN)". To convert FSN to NSN, add two zeros "00" after the Federal Supply Classification (FSC). Example: FSN 4120-959-4453 becomes NSN 4120-00-959-4453.

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B-1 and B-2	B-1 and B-2
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C-11	C-11 (Reverse blank)

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HEADQUARTERS
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OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS

PUMP ASSEMBLY, FLAMMABLE, LIQUID, CENTRIFUGAL, SELF-PRIMING, GED, 2-IN., 100 GPM
(AMERICAN AIR FILTER INC., MODEL FARE 3950)
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CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual is for your use in operating and maintaining the pump assembly. Also included are descriptions of main units and their functions in relation to other components.

b. Numbers in parenthesis following nomenclature callouts on illustrations indicate quantity; numbers preceding nomenclature callouts indicate preferred sequence.

1-2. Maintenance Forms and Records

Maintenance forms and records that you are required to use are explained in TM 38-750.

1-3. Reporting of Errors

You can help to improve this manual by calling attention to errors and by recommending improvements. Your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) should be mailed direct to the Commander, U.S. Army Troop Support Command, ATTN: DRSTS-MPP, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120. A reply will be furnished direct to you.

1-4. Equipment Serviceability Criteria (ESC)

This equipment is not covered by an ESC.

1-5. Destruction of Army Material to Prevent Enemy Use

Refer to TM 750-244-3 (Procedures for Destruction of Equipment to Prevent Enemy Use) For information and instructions on destruction of equipment to prevent enemy use.

1-6. Administrative Storage

Refer to TM 740-90-1 (Administrative Storage of Equipment) for information and instructions pertaining to administrative storage.

Section II. DESCRIPTION AND DATA

1-7. Description

The pump assembly (figs. 1-1 and 1-2) is designed to pump flammable liquids at the rate of 100 gallons (378.5 liters) per minute. It consists of a gasoline engine, fuel system, and pump, mounted in a tubular frame. The maintenance paragraphs of this manual contain detailed descriptions of its components.

1-8. Difference in Models

This manual covers only the pump assembly. No known unit differences exist for the individual model covered.

1-9. Identification and Tabulated Data

a. Identification. The pump assembly has two major identification plates. Information contained on these plates is listed below.

(1) The manufacturer's data plate, located on the side of the frame, contains information on the manufacturer, part number, serial number, dimensions, weight, and Federal stock number.

(2) The gasoline engine data plate contains information on the manufacturer, serial number, model, Federal stock number, and displacement. It is located on the upper side of the flywheel housing.

b. Tabulated Data.

(1) *End item.*

Manufacturer	American Air Filter, Inc.
Part No.	13219E3950
Serial No.	RFE1001 and up
Length	32 inches (81.28 centimeters)
Width	20 inches (50.8 centimeters)
Height	21 inches (53.34 centimeters)
Weight	137 pounds (62.11 kilograms)
Federal Stock Number	4320-427-0002

(2) *Engine.*

Manufacturer	Chrysler Outboard Corp.
Serial No.	87051
Model	2A016-3

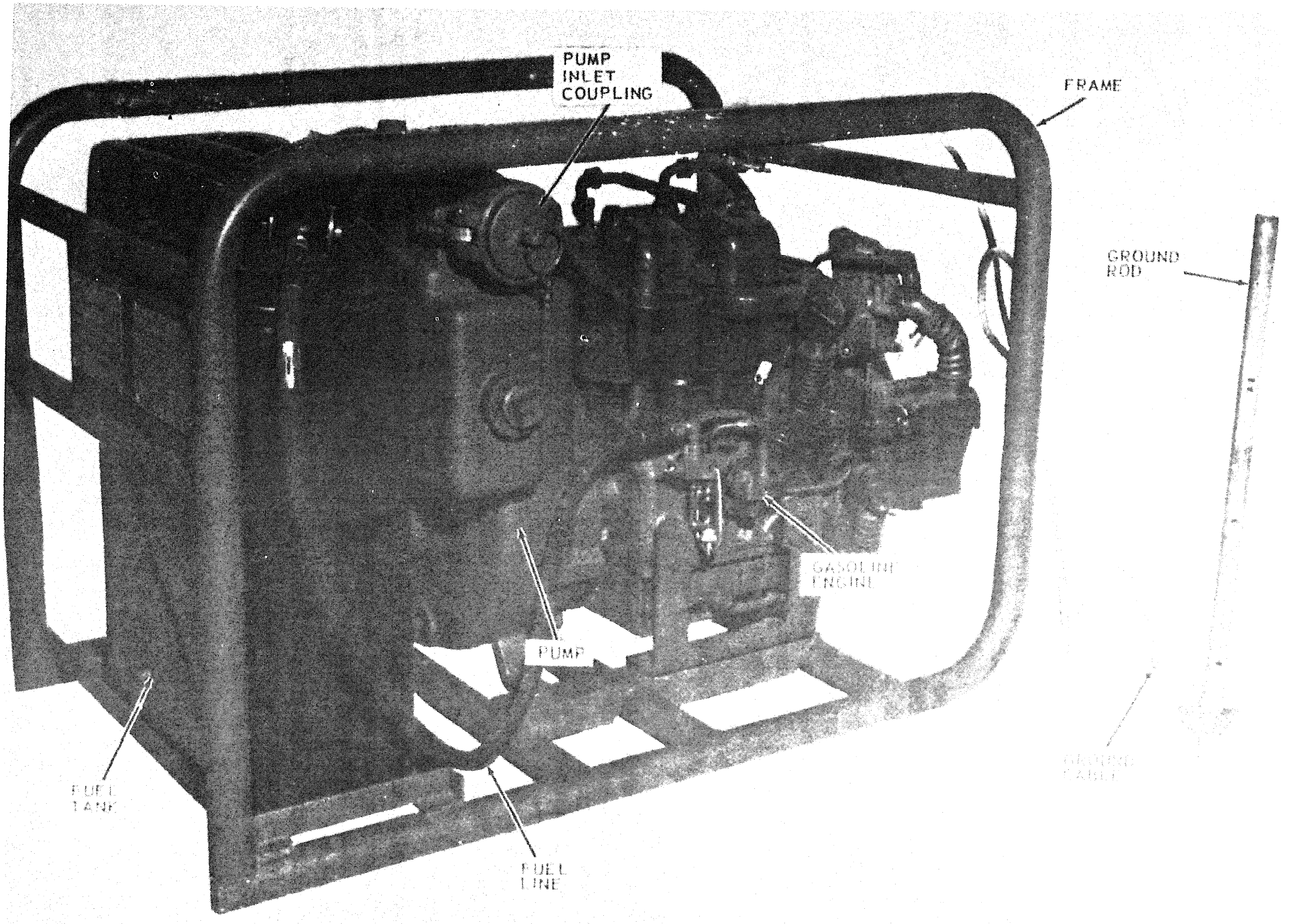


Figure 1-1: Pump assembly, right rear, ¾ view.

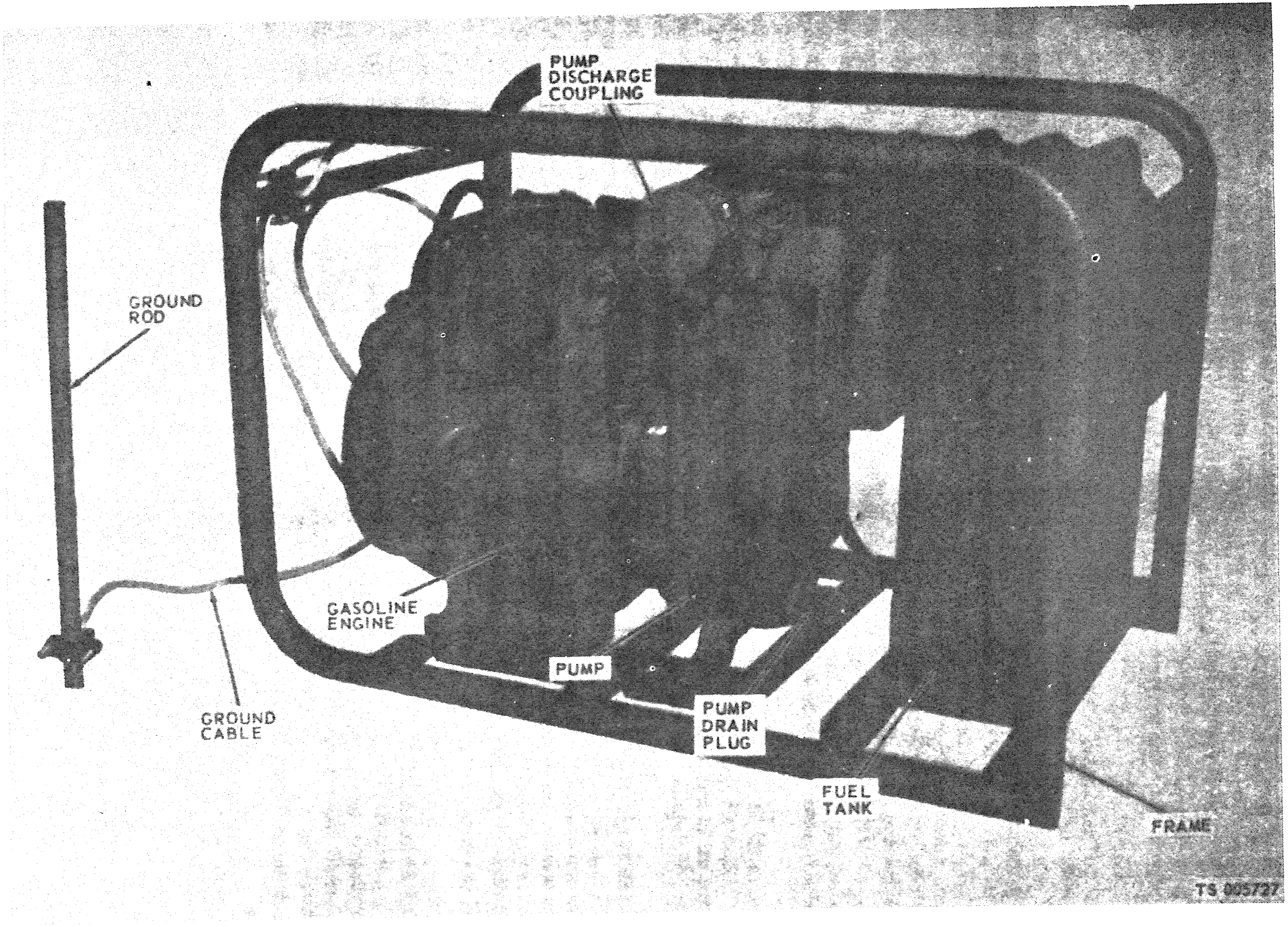


Figure 1–2. Pump assembly, left rear, ¾ view.

Displacement	16 cubic inches (262.2 cubic centimeters).

(3) *Capacitors.*

Rated Capacity	100 gallons (378.5 liters)
Total Head	100 feet (30 meters)
Priming Capacity Pump	2 gallons (7.57 liters)

(4) *Operating Pressure.*

Normal operating pressure	35 p.s.i. at full flow

1-10. Torque Data

The standard nut and bolt torque data is as follows:

Intermediate to engine	[illegible]
Impeller to shaft	[illegible]
Intermediate to casing	[illegible]

CHAPTER 2
OPERATING INSTRUCTIONS

WARNING

If equipment fails to operate, refer to troubleshooting procedures in Chapter 3.

Section I. OPERATING PROCEDURES

2-1. General

The instructions contained in this section are for the information and guidance of personnel responsible for operating the pump. It describes, illustrates, and locates the controls and furnishes the operator/crew sufficient information to insure proper operation of the equipment.

2-2. Controls

The location, purpose, and normal operating position of the controls are illustrated in figure 2-1.

2-3. Operation Under Usual Conditions

a. The instructions in paragraph 2-4 through 2-7 are furnished for the information and guidance of personnel responsible for the operation of the pump assembly.

b. The operator must know how to perform every operation of which the pump is capable. Paragraphs 2-4 through 2-7 contain instructions for starting, stopping, and operating the equipment. Since nearly every job presents a different problem, the operator may have to vary given procedures to fit the individual job.

2-4. Preparing the Equipment for Operation

a. Maintenance.

(1) Perform the before operation maintenance checks and services (Table 3-1).

(2) Refer to the lubrication instructions (para 3-1) for information on lubrication of the engine.

b. Suction Line.

(1) The pump assembly is equipped with a 2-inch (5.08 centimeters) quick disconnect female coupling (fig. 1-1) on the suction side of the pump.

(2) Connect a non-collapsible (rigid wall) hose to the suction side of the pump. Locate the pump assembly so as to keep the suction line as short as possible. Avoid laying the line over rises which will form pockets.

(3) Reduction in the pumping capacity becomes noticeable at lifts in excess of 15 feet (4.57 meters) and is very pronounced at 25 feet (7.62 meters). If the pump is operated at a high suction lift, use extra care that all hose connections are air tight. A small air leak in the suction line may prevent priming of the pump.

NOTE

Do not use a centrifugal pump for suction lifts in excess of 25 feet (7.62 meters).

c. Discharge Line.

(1) The pump assembly is equipped with a 2-inch (5.08 centimeters) quick disconnect male coupling (fig. 1-2) on the discharge side of the pump.

(2) Connect the collapsible hose to the discharge side of the pump.

d. Grounding. Ground the pump assembly by driving a grounding rod (fig. 1-1) at least 36 inches (91.44 centimeters) deep before connecting the ground cable. In the event that impregnable soil is encountered, bury a ground rod with the grounding cable attached at least 8 inches (20.32 centimeters) beneath the surface.

e. Priming. Prime the pump as instructed in figure 2-2.

2-5. Starting the Gasoline Engine

WARNING

Be sure the pump assembly is properly grounded (para 2-4*d*) Before starting the gasoline engine. Do not operate the pump assembly without first priming the pump.

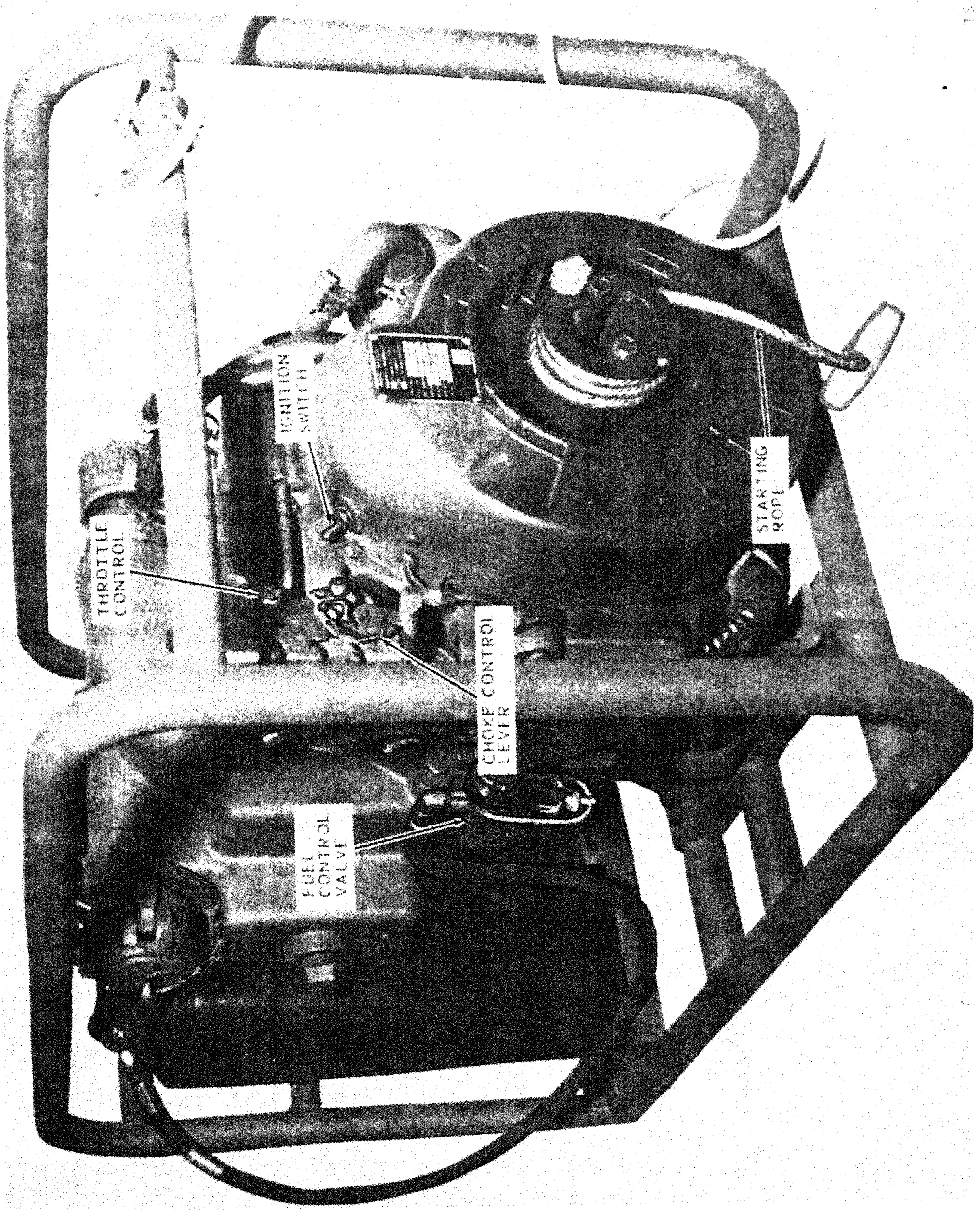
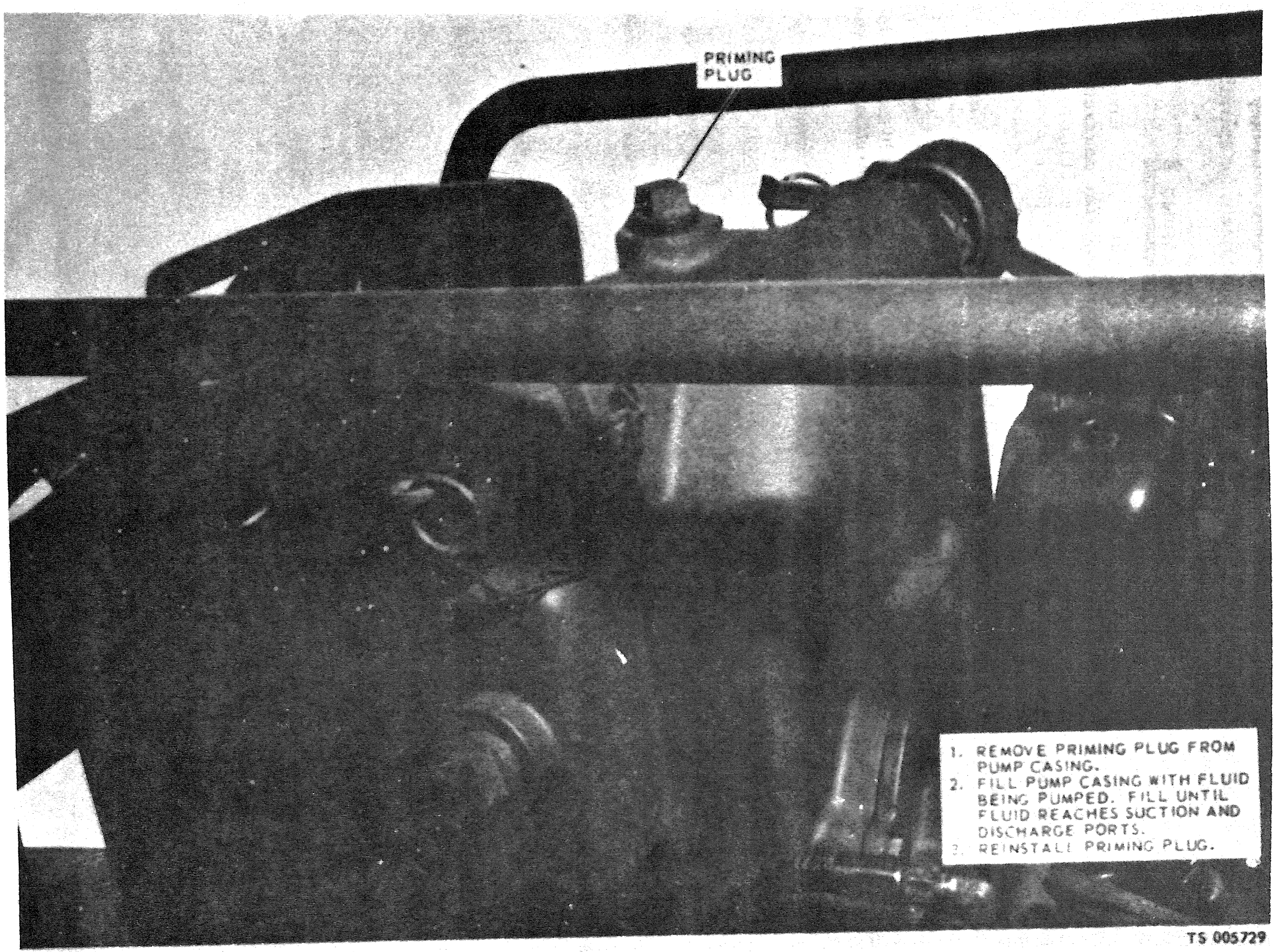


Figure 2-1. Controls.



1. REMOVE PRIMING PLUG FROM PUMP CASING.
2. FILL PUMP CASING WITH FLUID BEING PUMPED. FILL UNTIL FLUID REACHES SUCTION AND DISCHARGE PORTS.
3. REINSTALL PRIMING PLUG.

TS 005729

Figure 2-2. Priming the pump.

a. Prepare the equipment for operation (para 2–4).

b. Open any valves in the suction and discharge lines.

c. Start the gasoline engine per instructions in figure 2–3.

CAUTION

If the engine runs more than 2 minutes without pumping after initial start, stop the engine and refer to the troubleshooting procedures in Chapter 3.

2–6. Stopping the Gasoline Engine

Stop the gasoline engine per instructions in figure 2–4.

2–7. Operating the Pump Assembly

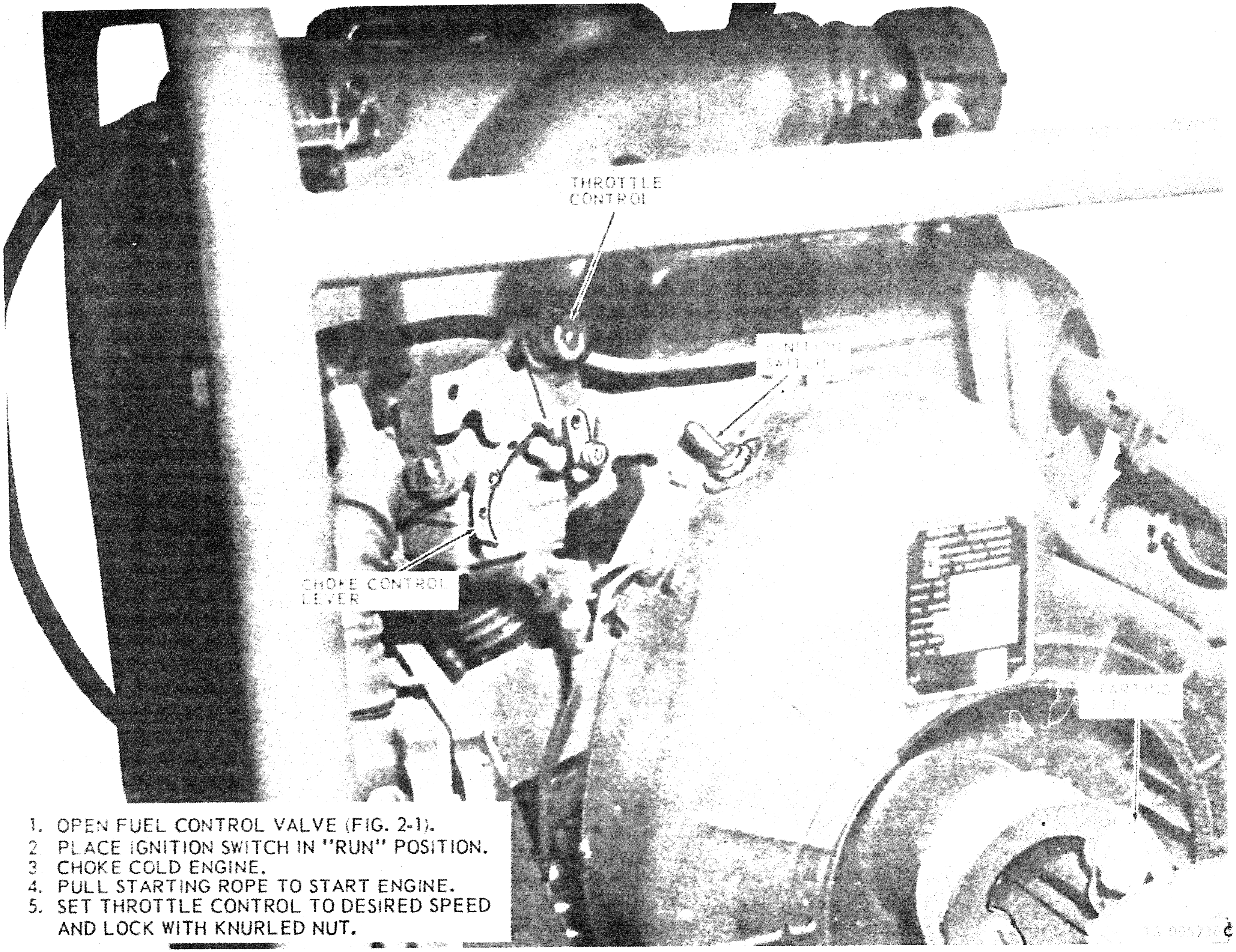
a. Prepare the equipment for operation (para 2–4).

WARNING

Extreme care must be taken to avoid fuel coming in contact with the manifold or muffler during or after operation. Fuel in contact with these areas may cause fire or explosion.

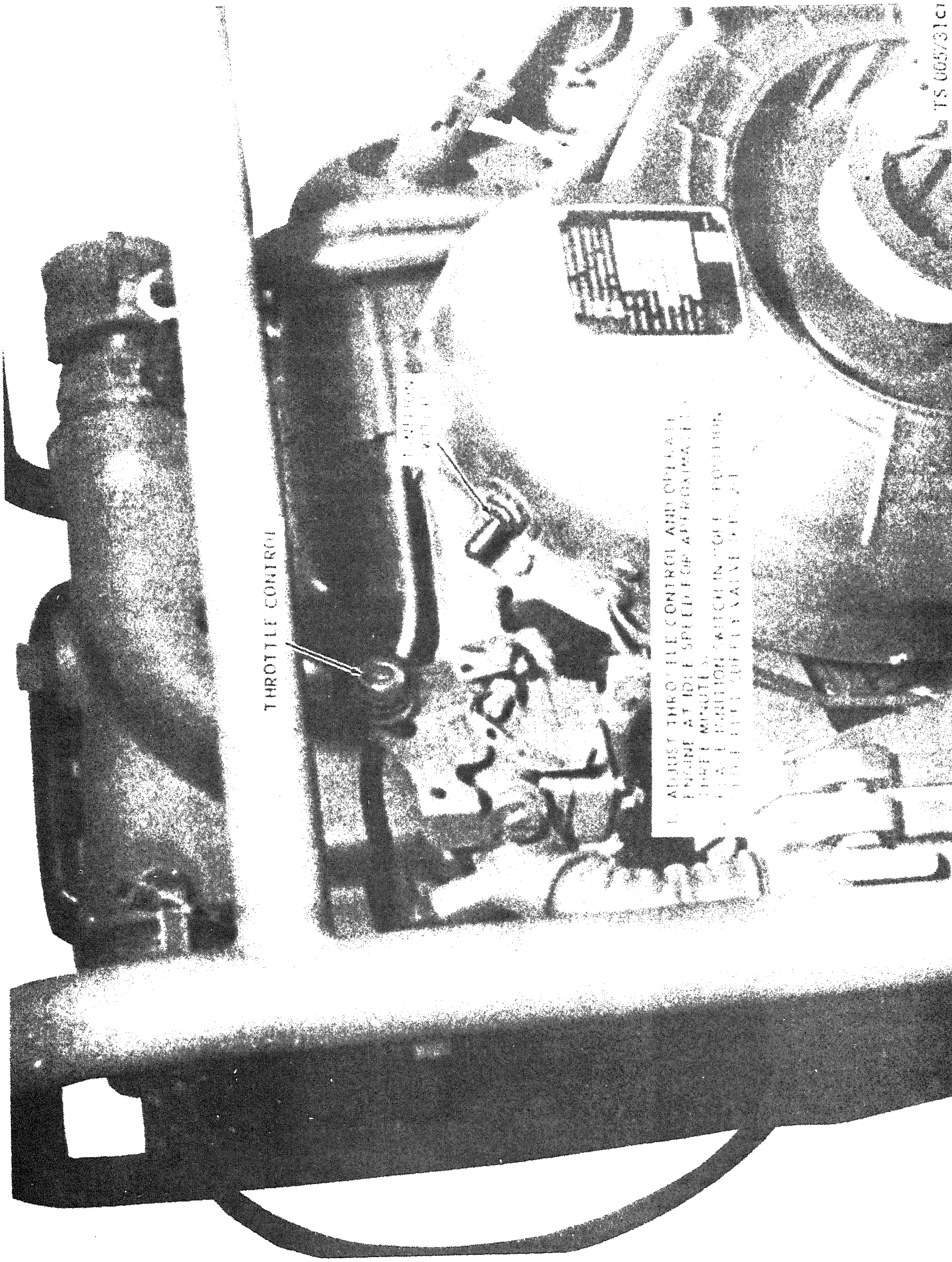
b. Start the gasoline engine (para 2–5).

c. When engined is warmed up and pump is pumping fluid, adjust the throttle (fig. 2–1) to obtain the maximum output of 100 gallons (380 liters) per minute. Lock the throttle with the knurled nut.



1. OPEN FUEL CONTROL VALVE (FIG. 2-1).
2. PLACE IGNITION SWITCH IN "RUN" POSITION.
3. CHOKE COLD ENGINE.
4. PULL STARTING ROPE TO START ENGINE.
5. SET THROTTLE CONTROL TO DESIRED SPEED AND LOCK WITH KNURLED NUT.

Figure 2-3. Gasoline engine starting instructions.



1. ADJUST THROTTLE CONTROL AND OPERATE ENGINE AT IDLE SPEED FOR APPROXIMATELY THREE MINUTES.

2. PLACE IGNITION SWITCH IN "OFF" POSITION [illegible] FUEL SUPPLY VALVE [illegible]

2–8. Operation in Extreme Cold (Below 0°F.)

a. General. At extreme low temperatures, the lubricants used for normal temperatures stiffen and lose much of their lubricating effect, while metals become more brittle and lose some of their ability to withstand shock.

b. Lubrication. Refer to TM 5-2805-257-14 for information on lubrication of the gasoline engine.

c. Fuel Tank. Keep the fuel tank as full as possible at all times to prevent condensation of moisture in the tank. Be sure to use the proper grade of fuel.

2–9. Operation in Extreme Heat

a. General. Operating in extreme heat requires more frequent lubrication of the engine. Lubrication of the pump is not required.

b. Lubrication. Refer to TM 5-2805-257-14 for information on lubricating the gasoline engine.

c. Fuel Tank. Do not fill the fuel tank completely; allow room for expansion of fuel.

d. Make sure the engine is sufficiently vented.

e. Due to evaporation of fluid in extreme heat, check the pump casing for adequate priming fluid level. Reprime if necessary (fig. 2–2).

2–10. Operation in Dusty or Sandy Areas

a. General. Operating in dusty or sandy areas requires more frequent and thorough service to the pump components to prevent damage caused by the dust and dirt.

b. Lubrication. Refer to TM 5-2805-257-14 and lubricate the gasoline engine more frequently. Clean all lubrication points before and after lubrication. Keep lubrication containers tightly sealed. Clean thoroughly the area around the engine oil filler cap before checking or adding oil.

c. Fuel Tank. Prevent the entry of dust and dirt into the fuel system. Refer to TM 5-2805-257-14 and clean the filter and sediment bowl frequently. Check the air cleaner indicator at frequent intervals.

d. Keep the engine air passages clean and free of accumulated dirt or sand that may obstruct the flow of air.

2–11. Operation in Rainy or Humid Conditions

a. If the pump is installed outdoors in conditions of rain or high humidity, erect a shelter to protect the unit. Cover the unit with a tarpaulin when inoperative if erection of a shelter is not possible.

b. Keep the fuel tank as full as possible at all times to prevent condensation.

c. Inspect the unit closely for corrosive action. Clean and paint chipped areas.

d. Lubricate frequently under wet conditions, and always lubricate after operation.

2–12. Operation in Salt Water Areas

a. Keep all components as clean and free of moisture as possible. Keep a thin coat of oil on all exposed machined surfaces.

b. Clean and repaint all pre-painted surfaces as required.

c. If the pump assembly has been exposed to excessive salt water spray, wash all exposed areas with clean, fresh water as soon as possible.

2–13. Operation At High Altitudes

a. General. As altitudes increase, the thinning of air decreases engine efficiency, reducing the pumping efficiency. For this reason, it is important to maintain systems at peak efficiency to assure that all available power is applied to the pump.

b. Engine Carburetor. Decreased air pressure at high altitudes upset the calibration of the carburetor, causing an excessively rich fuel-air mixture. Adjust the carburetor as instructed in TM 5-2805-257-14.

c. Engine Air Cleaner. Take care that the air cleaner is operating efficiently. Service the air cleaner as necessary (TM 5-2805-257-14).

d. Ventilation. Provide adequate fresh air supply to keep the engine from overheating.

CHAPTER 3

OPERATOR/CREW MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3–1. Detailed Lubrication Information

a. General. Lubrication of the pump assembly consists of lubricating the gasoline engine. Refer to TM 5–2805–257–14 for information on the lubrication of the gasoline engine. Keep all lubricants in closed containers and stored in a clean, dry place away from external foreign material to mix with lubricants. Keep all lubrication equipment clean and ready for use.

b. Cleaning. Keep all external parts not requiring lubrication clean and free of lubricants. Before lubricating the equipment, wipe all lubrication points free of dirt and grease. Clean all lubrication points after lubrication to prevent accumulation of foreign matter.

3–2. Points of Lubrication

a. Service the lubrication points at the proper intervals.

b. Check the engine crankcase oil level frequently, as oil consumption may increase.

c. The engine oil may require more frequent changing because contamination by dilution and sludge formation will increase under cold weather operating conditions.

Section II. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

3–3. General

To insure that the pump assembly is ready for operation at all times, it must be inspected systematically so that the defects may be discovered and corrected before they result in serious damage or failure. Defects discovered during operation of the unit shall be noted for future corrections, to be made as soon as operation has ceased. Stop operation which would damage the equipment if operation were to continue. All deficiencies and shortcomings shall be recorded together with the corrective action taken on DA Form 2404, "Equipment Inspection and Maintenance Worksheet," at the earliest opportunity. When performing your "Before Operation" (B) and "During Operation" (D) PMCS, always keep in mind the cautions and warnings. After operation, be sure to perform your (A) PMCS.

3–4. Preventive Maintenance Checks and Services

Refer to table 3–1 for Preventive Maintenance Checks and Services.

a. Item Number Column. Checks and services are numbered in chronological order regardless of interval. This column will be used as a source of item numbers for the "TM Item Number" column on DA Form 2404 in recording results of PMCS.

b. Interval Columns. The columns headed "B", "D", "A", "W", and "M", will contain a dot (•) opposite the appropriate check indicating it is to be performed before, during, after, weekly, or monthly.

c. Combat Operability Column. A dot (•) in the "C" column will identify combat operability checks for unit readiness reporting purposes.

d. Item to be Inspected Column. The items listed in this column are divided into groups and identifies the items to be inspected.

e. Procedures Column. This column contains a brief description of the procedure by which the check is to be performed.

f. Equipment will be Reported Not Ready (RED) Column. This column will contain the criteria which will cause the equipment to be classified as not ready (RED) because of inability to perform its primary mission.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shutdown.

Section II

Table 3-1 OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

Within designated interval, these checks are to be performed in the order listed.

B-Before A-After

Item No.	Interval		Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	Equipment is Not Ready/ Available if:
	B	A			
				NOTE Perform lubrication prior to or in conjunction with before PMCS. Refer to LO 5-2805-257-12. Keep the engine and pump free of dirt and oil on all external surfaces.	
1	●		Pump Assembly	Make the following walk around checks:	
				a. Inspect engine and pump for evidence of leakage (oil or fuel) on, around, or under the unit.	Class III oil leaks or any fuel leakage found.
				b. Check for loose, damaged, or missing hardware and parts.	Missing engine shrouding.
				c. Check ground rod assembly for corroded or broken clamps.	Assembly is corroded or broken.
				NOTE During starting and operation check for unusual noise, rough-running, lack of power, or excessive smoke that may indicate a defective or failed component.	
2		●	Air Cleaner Indicator	Check air cleaner restriction indicator. Notify organizational maintenance when indicator shows RED.	Indicator shows RED.
3		●	Fuel Tank	WARNING Do not fill fuel tank while engine is running or hot. Fill fuel tank.	

Section III. OPERATOR/CREW TROUBLESHOOTING

3–5. General

a. This section contains troubleshooting information for locating and correcting most of the operation troubles which may develop in the pump assembly. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine problem causes and corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

3–6. Operator/Crew Troubleshooting Chart

Refer to table 3–2 for the operator/crew troubleshooting chart.

Table 3-2. OPERATOR/CREW TROUBLESHOOTING

MALFUNCTION
  TEST OR INSPECTION
    CORRECTIVE ACTION

GASOLINE ENGINE

1. ENGINE FAILS TO START OR ITS HARD TO START
  Step 1. Check position of ignition switch.
    Place ignition switch in "RUN" position (fig. 2–3).
  Step 2. Check for closed fuel control valve.
    Open the fuel control valve (fig. 2–1).
  Step 3. Check for empty fuel tank.
    Service the fuel tank (fig. 3–1).
  Step 4. Check for dirt in fuel system.
    Service the fuel filter (TM 5–2805–257–14.)
  Step 5. Check for contaminated fuel.
    Drain and refuel fuel tank.
  Step 6. Check for other causes.
    Refer to TM 5–2805–257–14.

2. ENGINE STARTS BUT FAILS TO CONTINUE RUNNING
  Step 1.Check for insufficient fuel supply.
    Service the fuel tank (fig. 3–1).
  Step 2. Check for dirt in fuel system.
    Service the fuel filter (TM 5–2805–257–14).
  Step 3. Check for other causes.
    Refer to TM 5–2805–257–14.

PUMP ASSEMBLY

3. PUMP FAILS TO PRIME
  Step 1. Check for air leak in suction line. Check gasket in male hose connection.
    Tighten connections. Replace defective hose or gasket.
  Step 2. Check for plugged suction line.
    Remove any obstruction in the hose.
  Step 3. Check for proper priming of pump.
    Prime the pump (fig. 2–2).
  Step 4. Check for sufficient engine speed.
    Adjust throttle to increase speed (fig. 2–1).

4. NOISY PUMP OPERATION
  Step 1. Check for excessively high suction lift.
    Move pump closer to supply (para 2–4).
  Step 2. Check for insufficient flow to pump.
    Remove obstruction in suction line.
  Step 3. Check for other causes.
    Refer to higher maintenance.

5. PUMP FAILS TO DELIVER RATED CAPACITY
  Step 1. Check for leak in suction line. Check gasket in male hose connection.
    Tighten connections. Replace defective hose or gasket.
  Step 2. Check for excessively high suction lift.
    Move pump closer to supply (para 2–4).
  Step 3. Check for sufficient engine speed.
    Adjust throttle to increase speed (fig. 2–1).

Section IV. MAINTENANCE PROCEDURES

3–7. General

The instructions contained in this section are for the information and guidance of the operator in maintaining the pump assembly. Maintenance consists of inspecting and servicing those items which could cause a malfunction or hazardous condition, if uncorrected.

3–8. Fuel System

a. Fuel Line.

(1) *Inspection.* Inspect the fuel line connections for any evidence of fuel leakage.

(2) *Service.* Tighten leaking fittings. If leakage persists, discontinue operation and notify higher maintenance.

b. Fuel Tank.

(1) *Inspection.* Inspect the fuel tank for cracks, breaks, or any sign of fuel leakage.

(2) *Service.* Refer to figure 3–1 for instructions on servicing the fuel tank.

3–9. Pump Assembly

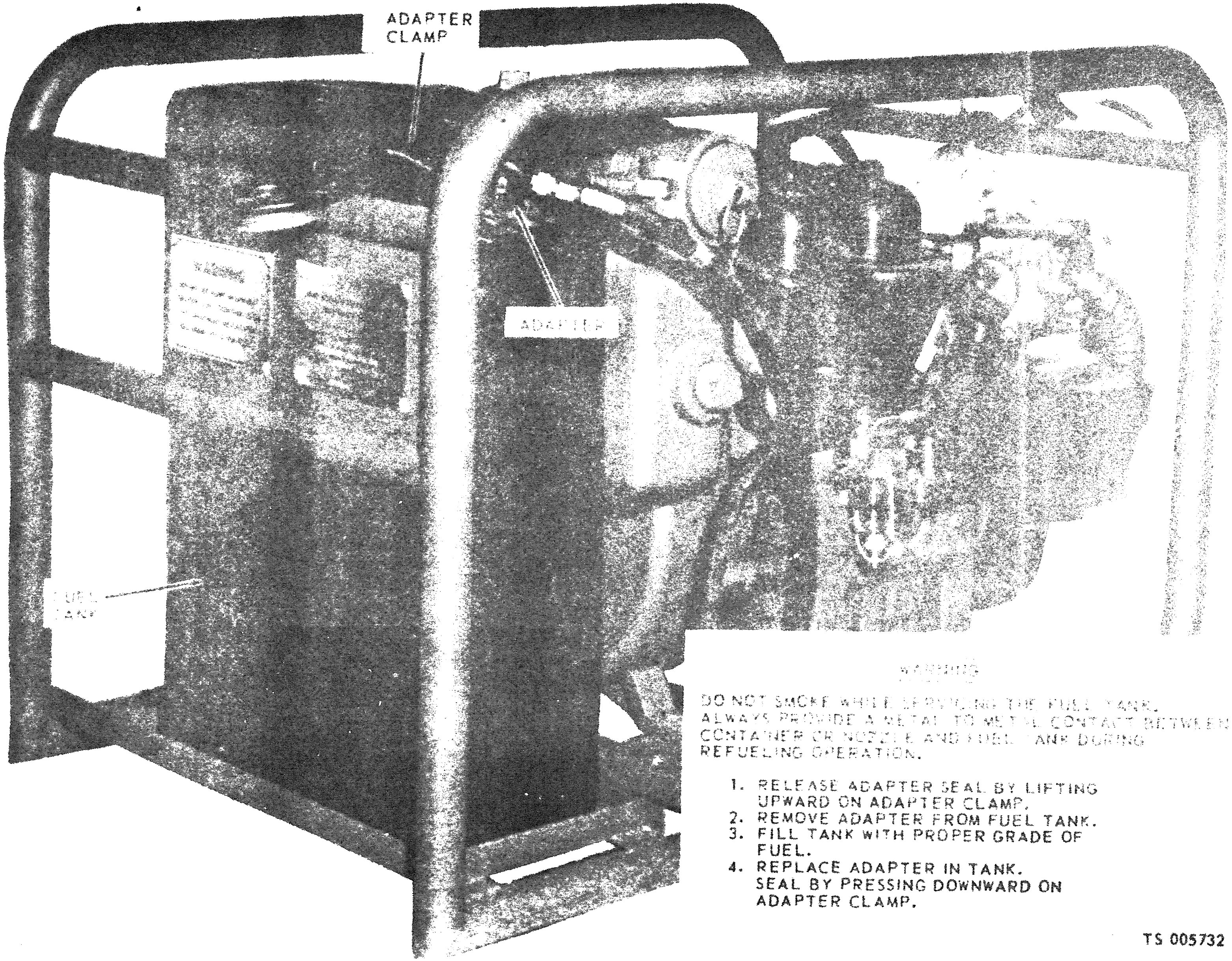
a. Inspection. Inspect the pump for any evidence of leakage of product being pumped.

b. Service. Replace gaskets in the suction and discharge couplings (fig. 3–2).

3–10. Engine Assembly

a. Spark Arrestor. Refer to figure 3–3 for inspection of the spark arrestor.

b. Engine. Refer to TM 5–2805–257–14 for instructions covering the inspection and service of the gasoline engine.



WARNING

DO NOT SMOKE WHILE SERVICING THE FUEL TANK. ALWAYS PROVIDE A METAL TO METAL CONTACT BETWEEN CONTAINER OR NOZZLE AND FUEL TANK DURING REFUELING OPERATION.

1. RELEASE ADAPTER SEAL BY LIFTING UPWARD ON ADAPTER CLAMP.
2. REMOVE ADAPTER FROM FUEL TANK.
3. FILL TANK WITH PROPER GRADE OF FUEL.
4. REPLACE ADAPTER IN TANK. SEAL BY PRESSING DOWNWARD ON ADAPTER CLAMP.

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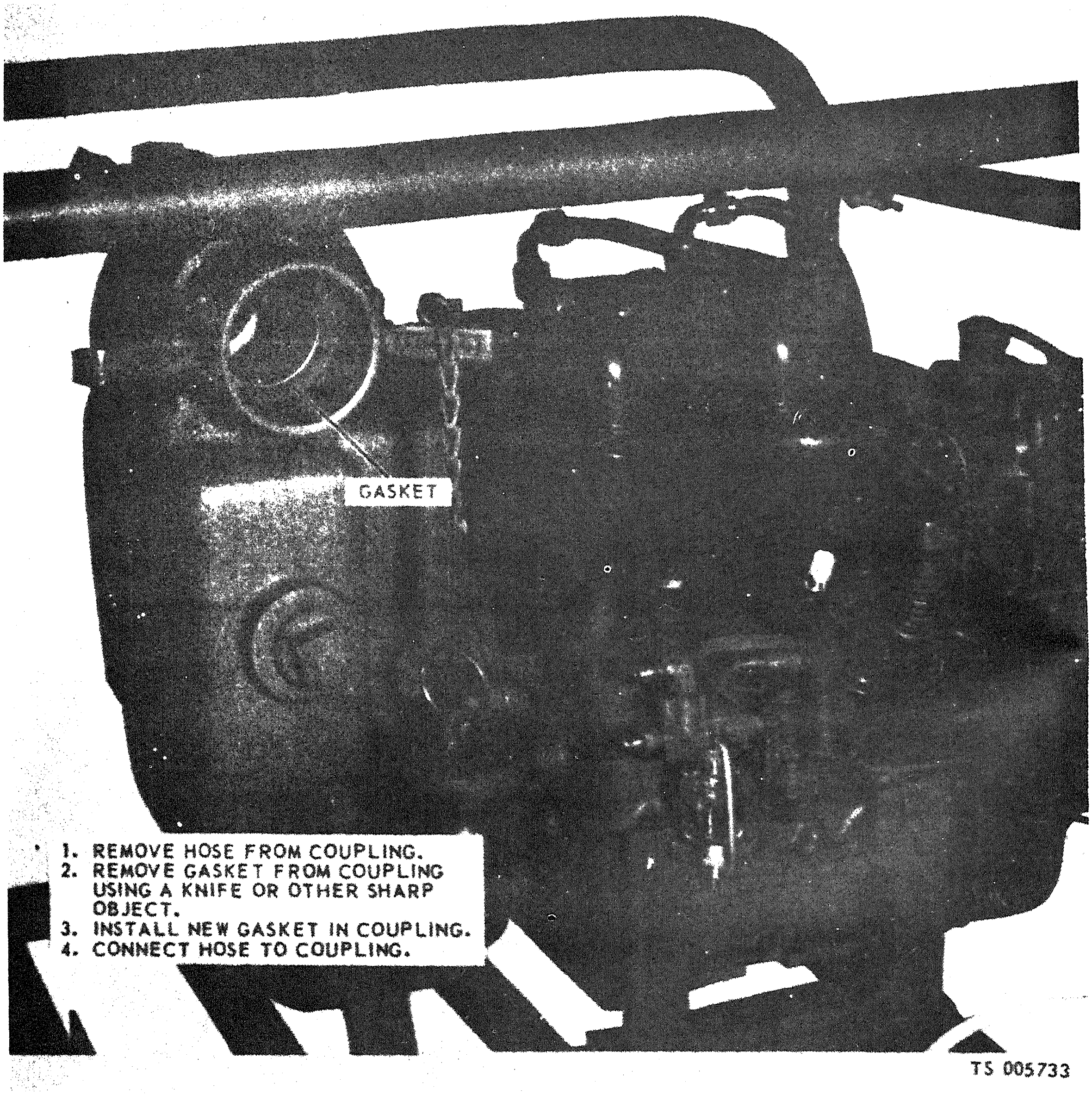
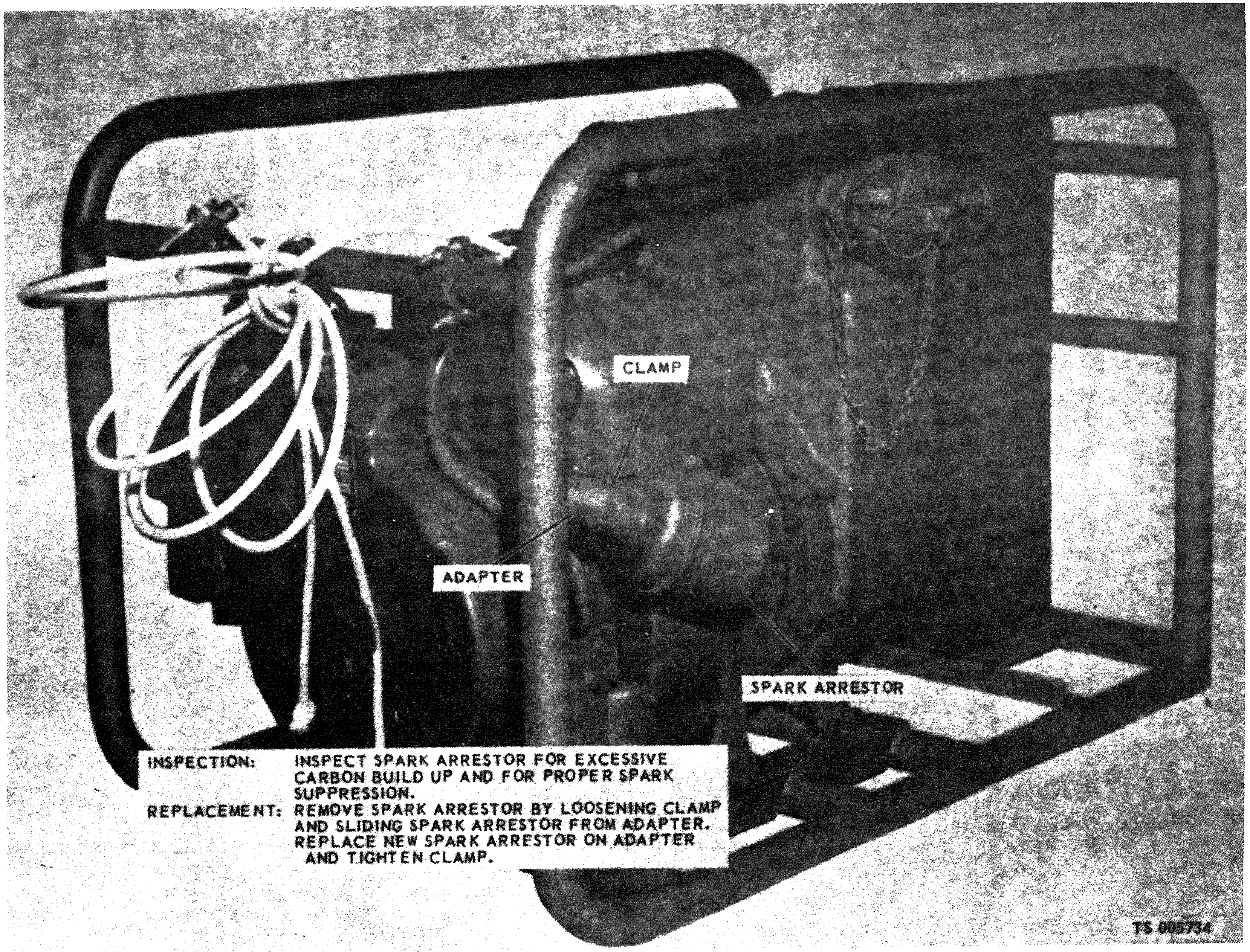
Figure 3-1. Fuel tank service.



1. REMOVE HOSE FROM COUPLING.
2. REMOVE GASKET FROM COUPLING USING A KNIFE OR OTHER SHARP OBJECT.
3. INSTALL NEW GASKET IN COUPLING.
4. CONNECT HOSE TO COUPLING.

Figure 3-2. Suction and discharge coupling gaskets, removal and installation.



INSPECTION: INSPECT SPARK ARRESTOR FOR EXCESSIVE CARBON BUILD UP AND FOR PROPER SPARK SUPPRESSION.

REPLACEMENT: REMOVE SPARK ARRESTOR BY LOOSENING CLAMP AND SLIDING SPARK ARRESTOR FROM ADAPTER. REPLACE NEW SPARK ARRESTOR ON ADAPTER AND TIGHTEN CLAMP.

Figure 3-3. Spark arrestor, inspection and replacement.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF MATERIAL

4–1. General

This section contains information on inspecting, servicing, and installing the equipment.

4–2. Inspecting and Servicing the Equipment

a. Inspecting.

(1) Make a complete and thorough visual inspection of the equipment, checking for loss or damage which may have occurred in shipment.

(2) Inspect the engine accessories to make sure they are securely mounted and in good working condition.

(3) Inspect all controls to see that they are intact and working properly.

b. Servicing.

(1) Refer to the lubrication instructions (para 3–1) and service the engine.

(2) Perform the preventive maintenance checks and services (Table 3–1).

4–3. Installation and Setting Up Instructions

a. General.

(1) If possible, choose a location which is free of excess moisture and dust.

(2) Install the pump assembly as level as possible. Provide ample space on all sides of the equipment for access in servicing. If possible, provide a suitable rigid foundation.

(3) If equipment is to be installed inside a building, make sure adequate ventilation is provided to carry off engine exhaust gases.

b. Installation.

WARNING

> Weight of pump exceeds one man lift limit. Maximum height of lift for two men is 2.8 feet (8.3 centimeters).

(1) Remove the pump assembly from the carrier and place it in position.

(2) Locate the pump so as to keep the suction line as short as possible.

(3) Connect the suction and discharge lines (para 2–4*b* and 2–4*c*).

(4) Ground the pump assembly (para 2–4*d*).

Section II. MOVEMENT TO A NEW WORKSITE

4–4. General

This section contains information on the movement of the pump assembly to a new worksite.

4–5. Dismantling for Movement

a. Disconnect the suction and discharge hoses from the pump assembly. Remove the pump drain plug (fig. 1–2) and drain the pump. Replace the drain plug.

b. Install the dust plug on the suction female coupling and the dust cap on the discharge male coupling of the pump.

c. Disconnect the ground cable from the rod and remove the grounding rod.

4–6. Movement

WARNING

> Weight of pump exceeds one man lift limit. Maximum height of lift for two men is 2.8 feet (81.3 centimeters).

a. Place the pump assembly on the carrier bed.

b. Secure the equipment to the carrier bed and transport the equipment to the new worksite.

4–7. Reinstallation after Movement

Refer to paragraph 4–3 for installation instructions.

Section III. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

4–8. Special Tools and Equipment

No special tools and equipment are required by organizational maintenance personnel for the performance of maintenance on the pump assembly.

4–9. Maintenance Repair Parts

Repair parts and equipment covering the gasoline engine are listed in TM 5–2805–257–24P. Repair parts and equipment covering the pump are listed and illustrated in Appendix C of this manual.

Section IV. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

4–10. General

To insure that the pump assembly is ready for operation at all times, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed in Table 4–1. The sequence numbers indicate sequence of minimum inspection requirement. Defects discovered during operation will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment if operation were continued. All deficiencies and shortcomings will be recorded together with the corrective action taken on DA Form 2404 (Equipment Inspection and Maintenance Work Sheet) At the earliest possible opportunity.

4–11. Organizational Preventive Maintenance

Table 4–1 contains a tabulated list of preventive maintenance checks and services which must be performed by organizational maintenance personnel. Sequence numbers indicate the sequence of minimum inspection requirements.

Table 4-1. Organizational Preventive Maintenance Checks and Services

Q-Quarterly

Item No.	Interval	Item to be Inspected	PROCEDURES
	Q		
1	●	Sediment Bowl	Check sediment bowl for moisture and service as required.

Section V. ORGANIZATIONAL MAINTENANCE TROUBLESHOOTING

4–12. General

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the pump assembly. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you determine probable causes and corrective actions. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions which may occur, nor all tests, inspections, and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

4–13. Organizational Maintenance Troubleshooting Chart

Table 4–2 lists the organizational maintenance troubleshooting malfunctions, probable causes, and recommended corrective actions.

Table 4-2 Organizational Maintenance Troubleshooting

MALFUNCTION
    TEST OR INSPECTION
        CORRECTIVE ACTION

GASOLINE ENGINE

1. FAULTY ENGINE OPERATION
- **Step 1. Check for defective fuel line or tank.**
  - **Replace defective fuel line or tank (para. 4-18).**
- **Step 2. Check for other causes.**
  - **Refer to TM 5-2805-257-14.**

PUMP ASSEMBLY

Table 4-2. Organizational Maintenance Troubleshooting—Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

2. PUMP FAILS TO PRIME
   Step 1. Check for loss of proper engine speed.
      Adjust engine speed (fig. 2-1).
   Step 2. Check casing for low level priming.
      Prime the pump (fig. 2-2).
   Step 3. Check for defective suction hose.
      Replace the defective hose.
   Step 4. Check for defective coupling and gasket.
      Replace defective coupling or gasket.
3. NOISY PUMP OPERATION

Table 4-2. Organizational Maintenance Troubleshooting—Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

   Step 1. Check for excessively high suction lift or insufficient flow to pump.
      Move pump closer to supply or remove obstruction from hose.
4. FUEL LEAKAGE AT PUMP
   Step 1. Check for defective hose.
      Replace defective hose.
   Step 2. Check for defective coupling and gasket.
      Replace defective coupling or gasket.

Section VI. RADIO INTERFERENCE SUPPRESSION

4-14. General

Essentially, suppression is attained by providing a low resistance path to ground for stray currents. Methods used include shielding the ignition and high frequency wires, grounding the frame with bonding straps, and using resistors and capacitors.

4-15. Interference Suppression Components

a. Primary. Primary suppression components are those whose primary function is to suppress radio interference.

b. Secondary. Secondary suppression components have radio suppression functions which are incidental and/or secondary to their primary function.

4-16. Replacement of Suppression Components

Refer to TM 5-2805-257-14 for information on the interference suppression components.

Section VII. MAINTENANCE OF THE PUMP

4-17. General

This section contains instructions for the information and guidance of organizational maintenance personnel in maintaining the pump assembly.

4-18. Fuel System

a. General. Fuel system components consist of the fuel line, fuel tank, and fuel tank adapter.

b. Removal. Remove the fuel system per instructions in figure 4-1.

c. Disassembly. Disassemble the fuel system as follows:

(1) Remove fuel line (1, fig. 4-2) from fuel tank adapter (3).

(2) Remove adapter (3) from fuel tank (16).

(3) Remove pipe extension (4), pipe (5), and nipple (6) from the adapter head.

(4) Remove screws (7), washers (8), and clamp (9).

(5) Remove steel washer (10), rubber washer (11), sealing ring (12), and brass washer (13) from adapter head (14).

d. Cleaning, Inspection, and Repair.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F.-138°F.

(1) *Cleaning.*

(*a*) Clean the fuel hose with a cloth dampened with cleaning solvent (Fed Spec P-D-680) and dry thoroughly.

(*b*) Clean the fuel tank and adapter components with cleaning solvent (Fed Spec P-D-680) and dry thoroughly.

(2) *Inspection.*

(*a*) Inspect the fuel hose for cracks, breaks, or any sign of damage. Inspect hose fittings for cracks and damaged threads.

(*b*) Inspect the fuel tank and adapter for cracks, breaks, or other damage.

(3) *Repair.* Repair the fuel system by replacement of defective parts.

e. Reassembly. Reassemble the fuel tank adapter as follows:

(1) Place brass washer (13, fig. 4-2), sealing ring (12), rubber washer (11), and steel washer (10) on the adapter head (14).

(2) Position clamp (9) on adapter head (14) and secure with screws (7) and washers (8).

(3) Install nipple (6), pipe (5), and pipe extension (4).

(4) Install the assembled adapter (3) in fuel tank (16). Reconnect fuel line (1).

f. Installation. Install the fuel system (fig. 4-1).

4-19. Pump Assembly

a. General. Maintenance of the centrifugal pump is limited to the replacement of the inlet and discharge couplings, and if necessary, replacement of the entire centrifugal pump.

b. Coupling Replacement.

(1) The inlet coupling (fig. 1-1) and discharge coupling (fig. 1-2) can be unscrewed from the pump by turning in a counterclockwise direction.

(2) Inspect the couplings for cracks, damaged threads, or any other sign of damage. Repair is accomplished by replacing the damaged coupling.

(3) Install the couplings on the pump by turning in a clockwise direction.

c. Pump Removal.

(1) Remove the fuel system (fig. 4-1).

(2) Remove the centrifugal pump per instructions in figure 4-3.

d. Pump Inspection. Inspect the pump housing for cracks, breaks, or any other damage. Inspect the hardware for damaged threads.

e. Pump Installation,

(1) Refer to figure 4-3 and install the backhead intermediate on the gasoline engine. Refer to paragraph 1-10 for the torque values.

(2) Refer to figure 4-4 and place the impeller on the pump shaft. Refer to paragraph 1-10 for torque values and secure the impeller to the shaft with the impeller screw, washer, and shim. After the impeller is installed and torqued, the measurement from the intermediate face to the impeller vane should be 1/16 in. ± 1/32 in. as shown in figure 4-4. Remove or add shims to obtain the correct adjustment.

(3) Install the pump housing as shown in figure 4-3.

(4) Install the fuel system (fig. 4-1).

4-20. Engine Assembly

a. General. Power to drive the centrifugal pump is supplied by a 2-cylinder, air cooled, 3-horsepower, gasoline-fueled military standard engine.

b. Removal. Remove the engine per instructions in figure 4-5.

c. Cleaning, Inspection, and Repair. Refer to TM 5-2805-257-14.

d. Installation. Refer to figure 4-5 and install the gasoline engine.

4-21. Frame

a. General. Organizational maintenance of the tubular frame is restricted to the replacement of the frame and its components.

b. Removal.

(1) Remove the fuel system (fig. 4-1).

(2) Remove the pump and engine per instructions in figure 4-6.

(3) Remove the frame components as shown in figure 4-7.

c. Cleaning, Inspection, and Repair.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F.-138°F. (38°C.-59°C.)

(1) Clean all frame components with cleaning solvent (Fed Spec P-D-680) and dry thoroughly.

(2) Inspect ground wire clamps for breaks, cracks, or any other damage. Inspect hardware for damaged threads. Inspect the tubular frame for cracks, breaks, and misalignment.

(3) Repair by replacement of defective parts.

d. Installation.

(1) Install the frame components as shown in figure 4-7.

(2) Install the assembled engine and pump as shown in figure 4-6.

(3) Install the fuel system (fig. 4-1).

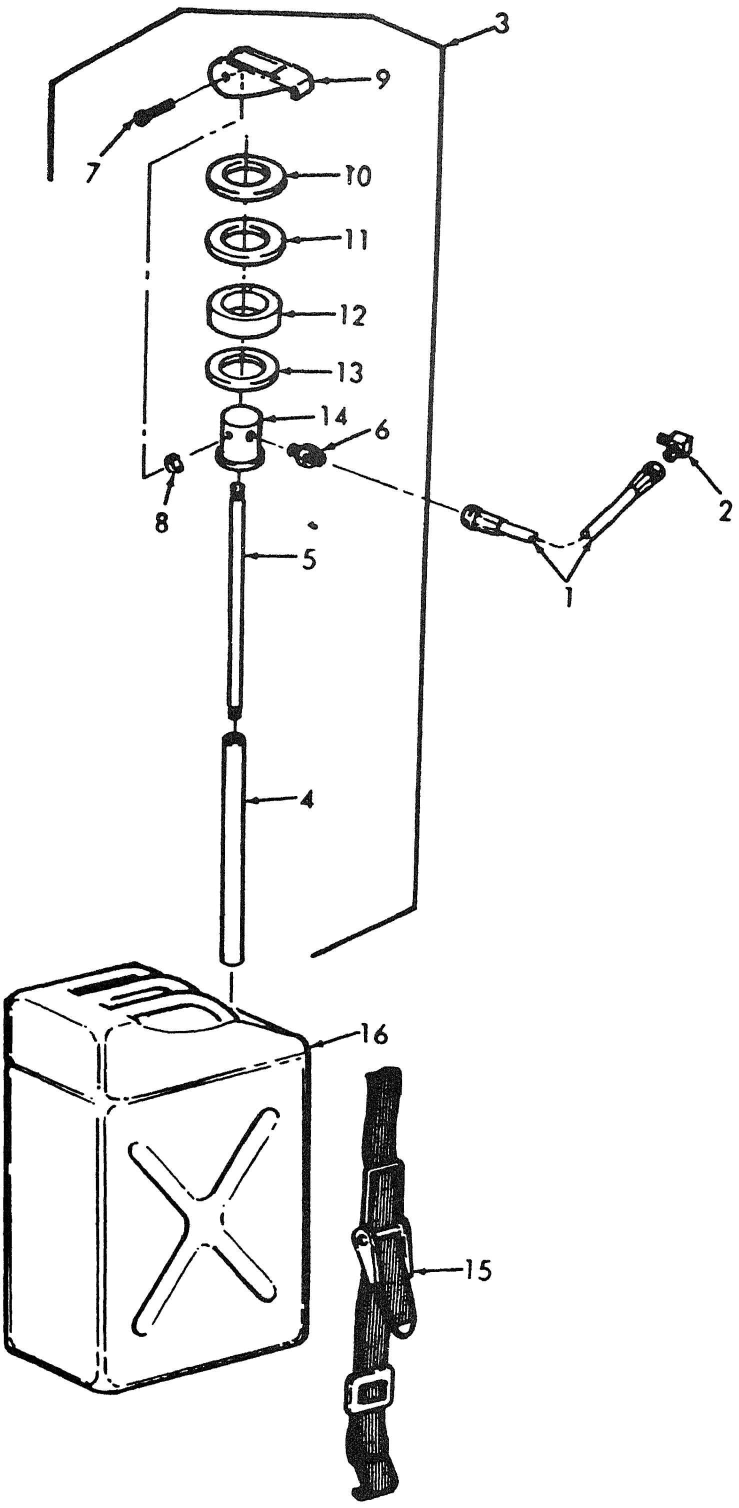


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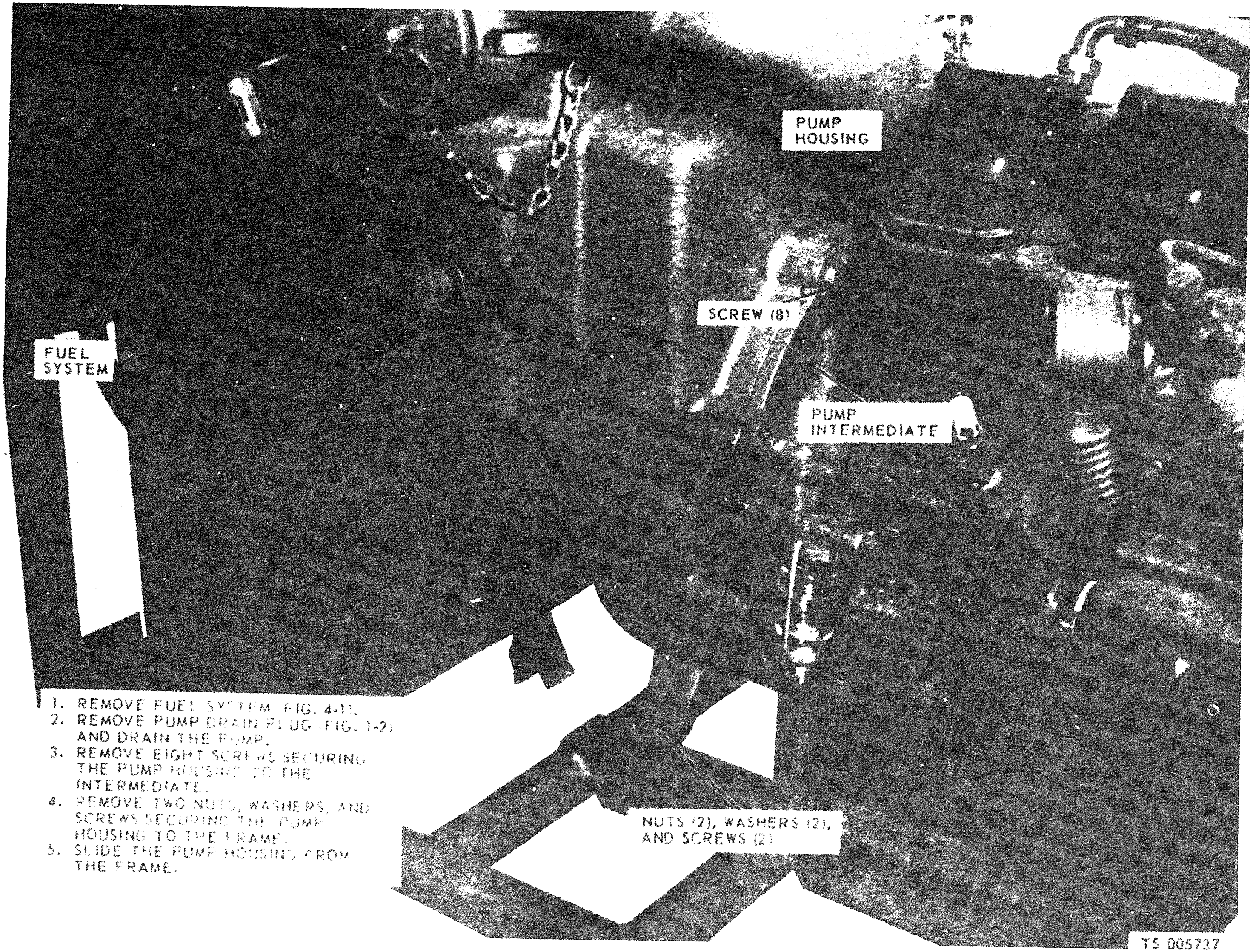
Figure 4-2. Fuel system, disassembly and reassembly.

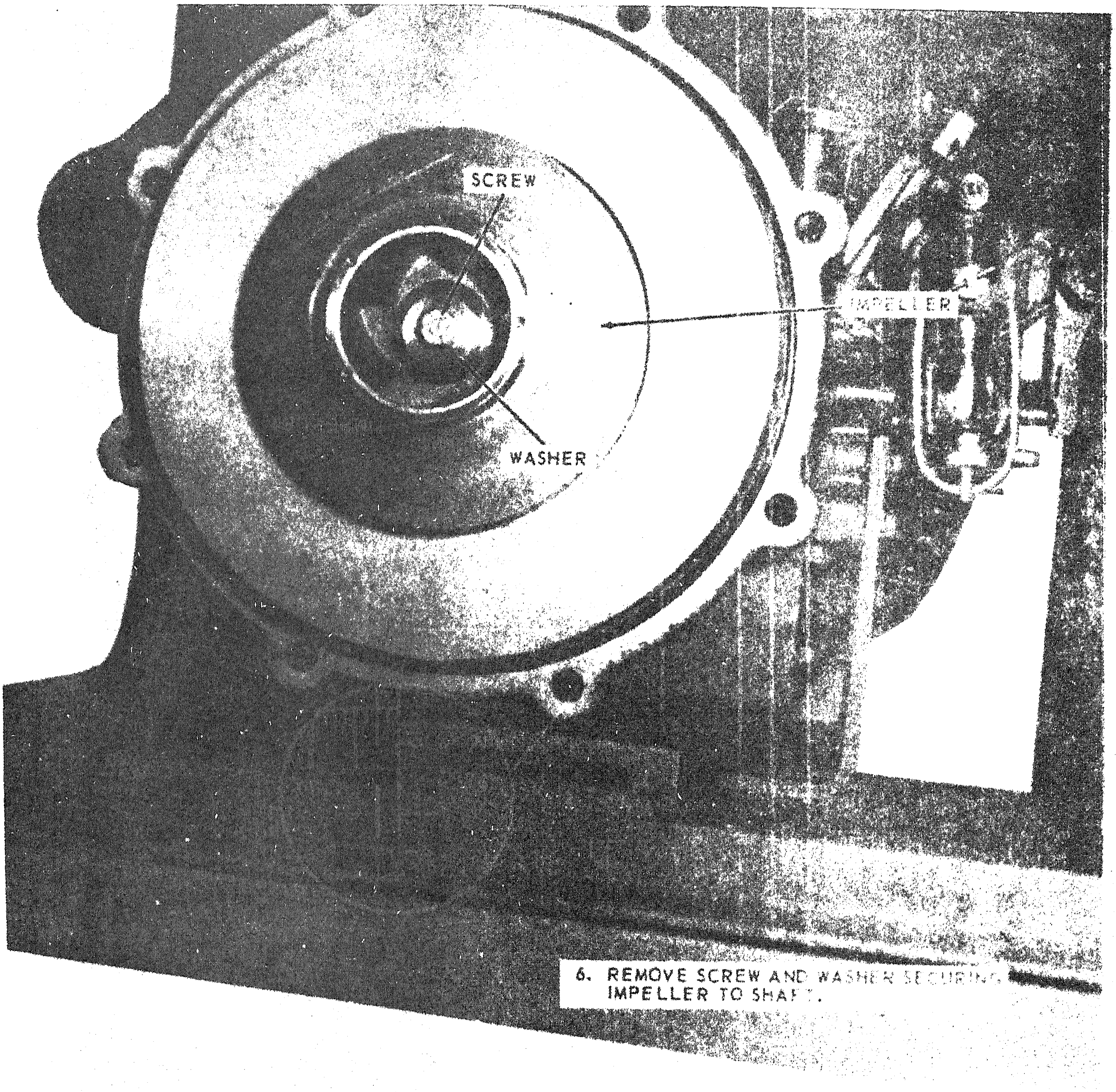
1 Fuel line
2 Elbow
3 Fuel tank adapter
4 Pipe extension
5 Pipe
6 Nipple
7 Screw
8 Washer
9 Clamp
10 Steel washer
11 Rubber washer
12 Sealing ring
13 Brass washer
14 Adapter head
15 Strap
16 Fuel tank

Figure 4-2. Fuel system, disassembly and reassembly—Continued



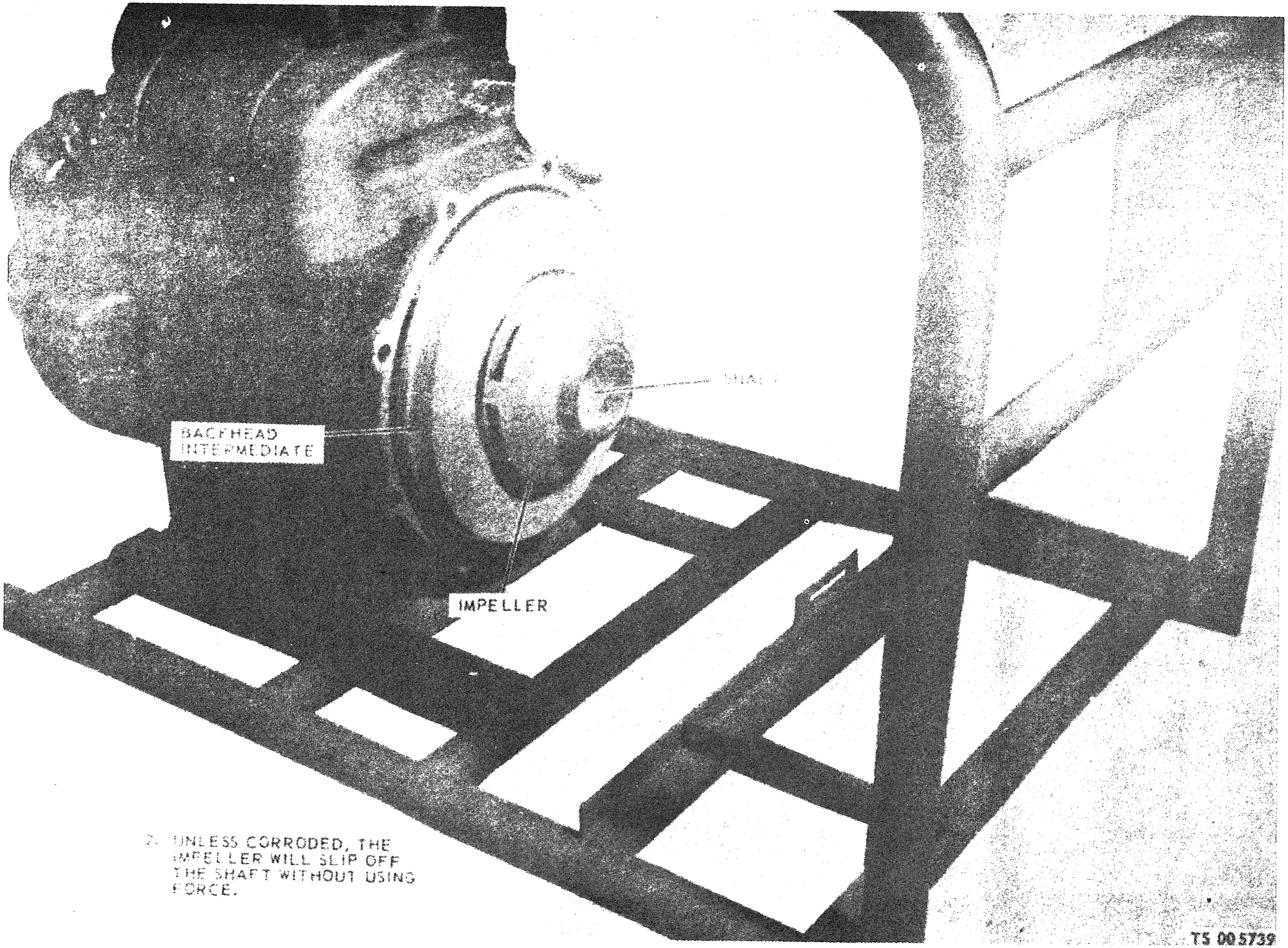
1. REMOVE FUEL SYSTEM (FIG. 4-1).
2. REMOVE PUMP DRAIN PLUG (FIG. 1-2) AND DRAIN THE PUMP.
3. REMOVE EIGHT SCREWS SECURING THE PUMP HOUSING TO THE INTERMEDIATE.
4. REMOVE TWO NUTS, WASHERS, AND SCREWS SECURING THE PUMP HOUSING TO THE FRAME.
5. SLIDE THE PUMP HOUSING FROM THE FRAME.

Figure 4-3. Pump assembly, removal and installation (Sheet 1 of 4).



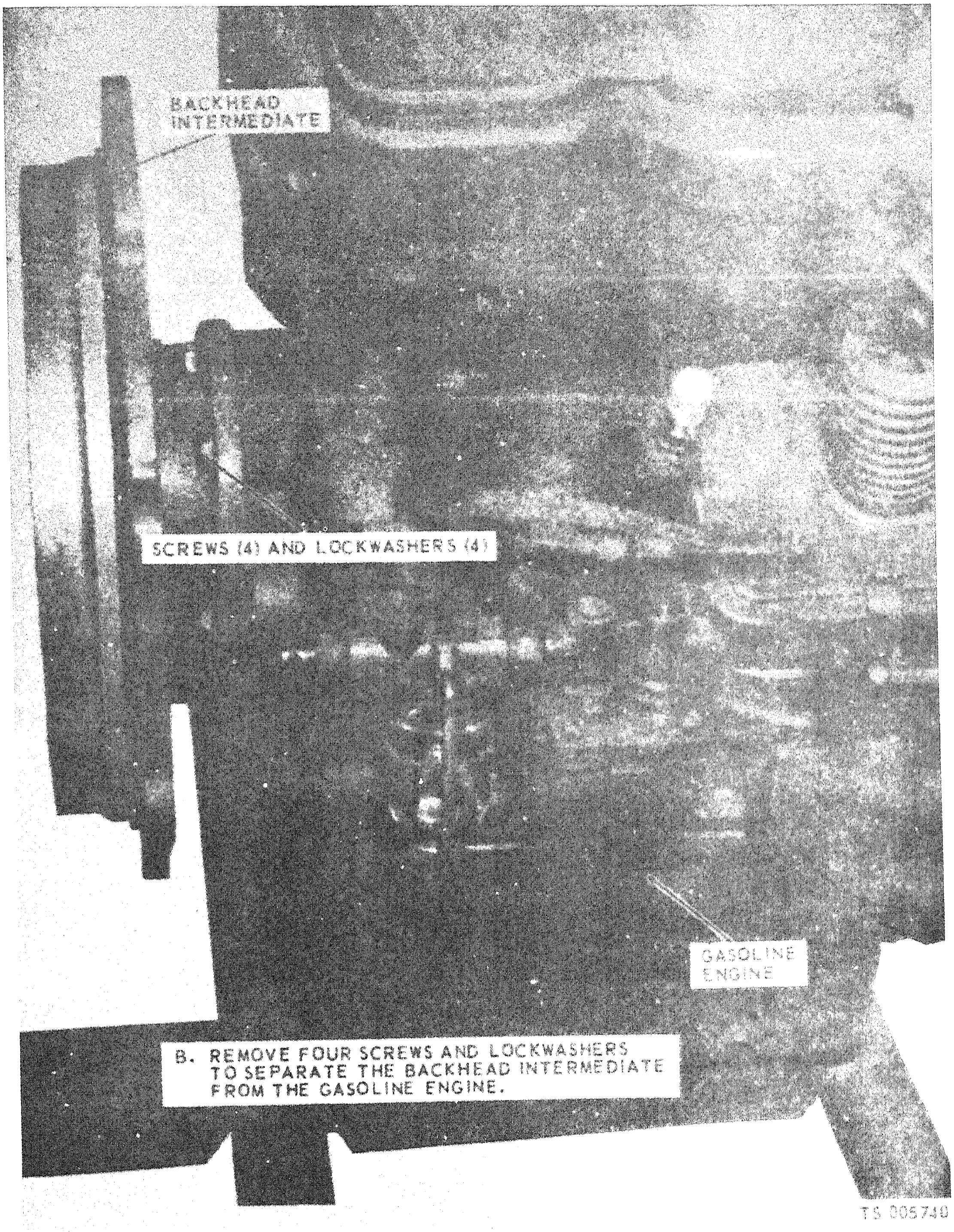
6. REMOVE SCREW AND WASHER SECURING IMPELLER TO SHAFT.

Figure 4-3. Pump assembly, removal and installation (Sheet 2 of 4).



2. UNLESS CORRODED, THE IMPELLER WILL SLIP OFF THE SHAFT WITHOUT USING FORCE.

Figure 4-3. Pump assembly, removal and installation (Sheet 3 of 4).



B. REMOVE FOUR SCREWS AND LOCKWASHERS TO SEPARATE THE BACKHEAD INTERMEDIATE FROM THE GASOLINE ENGINE.

Figure 4-3. Pump assembly, removal and installation (Sheet 4 of 4).

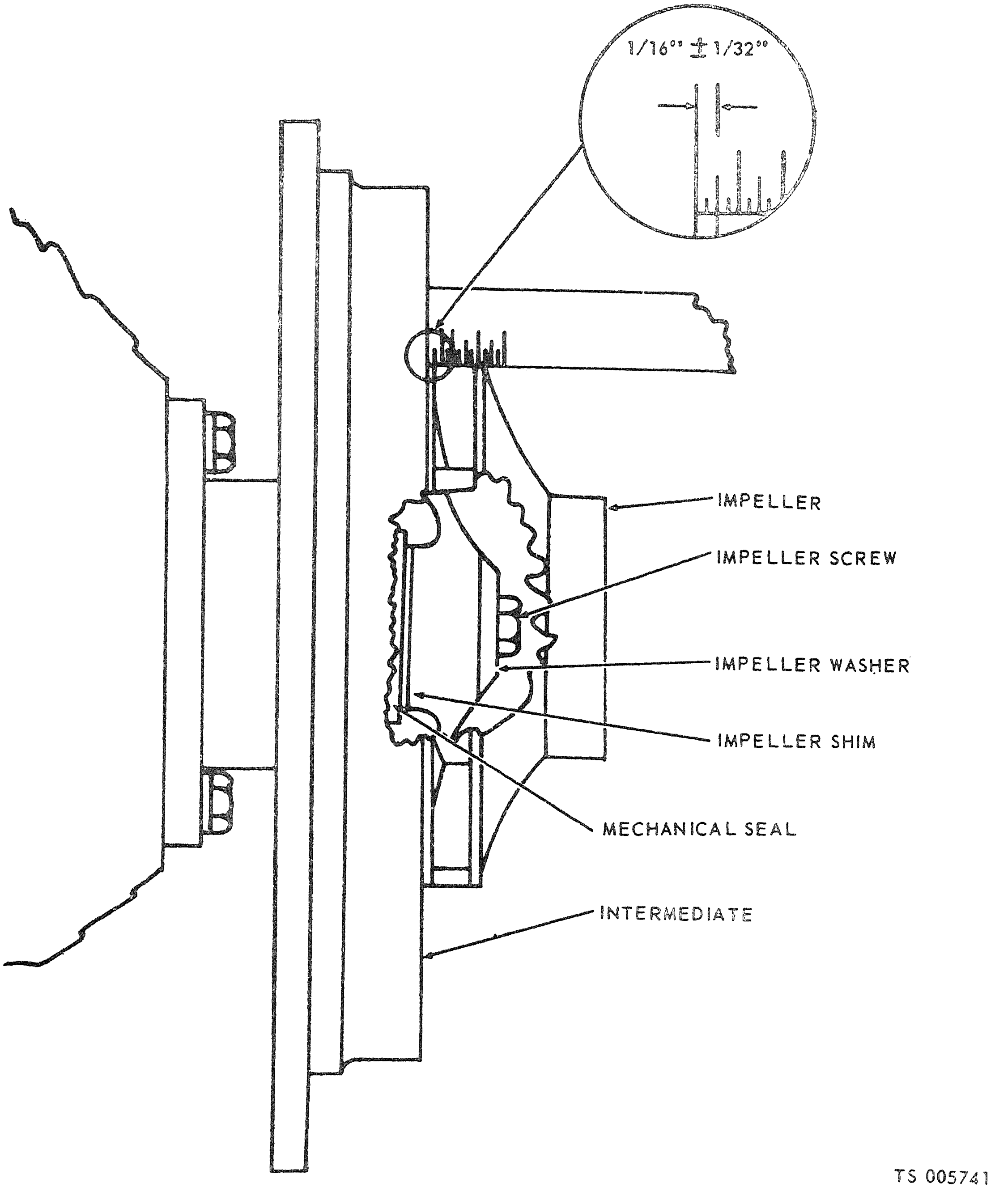


Figure 4-4. Impeller adjustment.

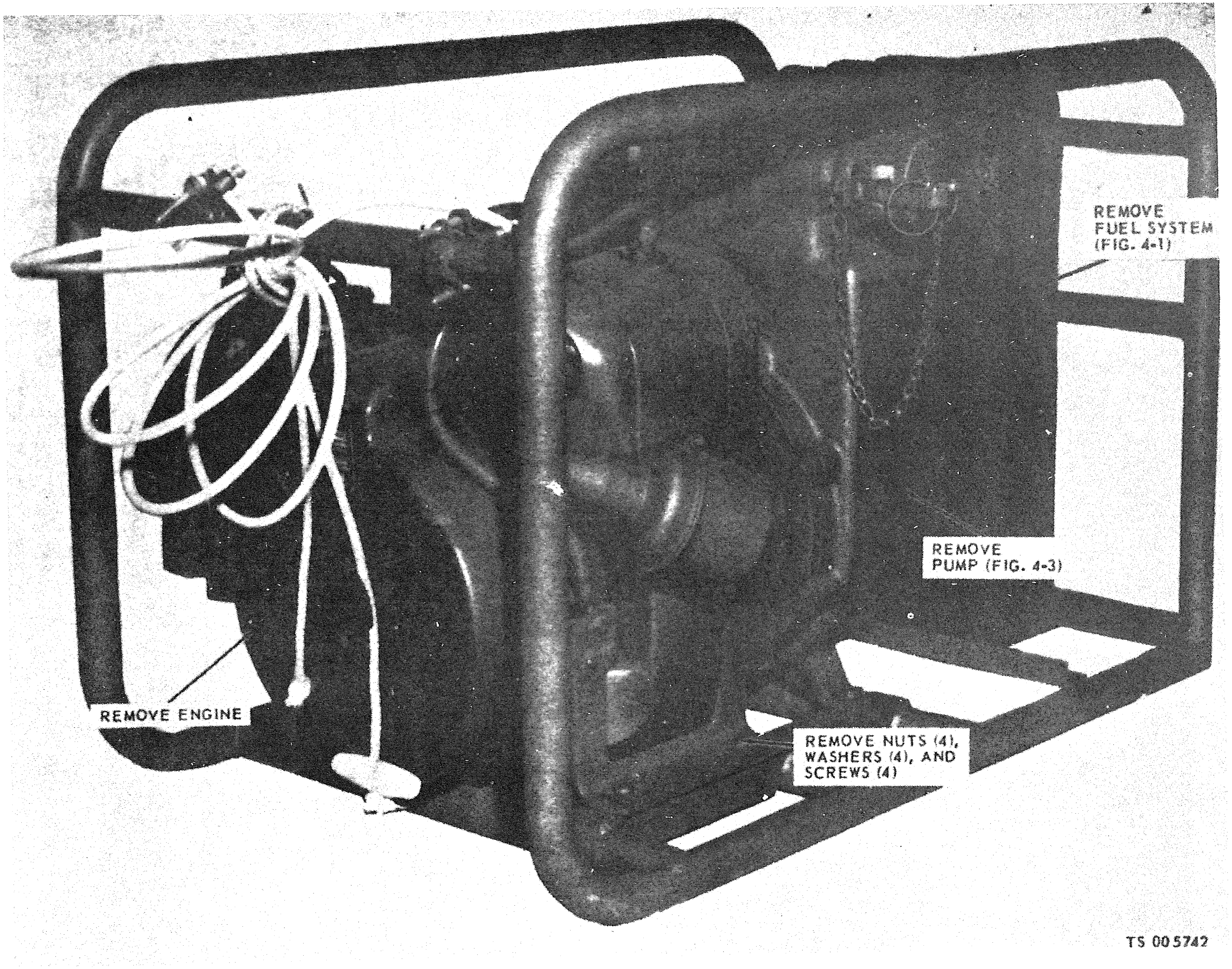

REMOVE FUEL SYSTEM (FIG. 4-1)
REMOVE PUMP (FIG. 4-3)
REMOVE ENGINE
REMOVE NUTS (4), WASHERS (4), AND SCREWS (4)
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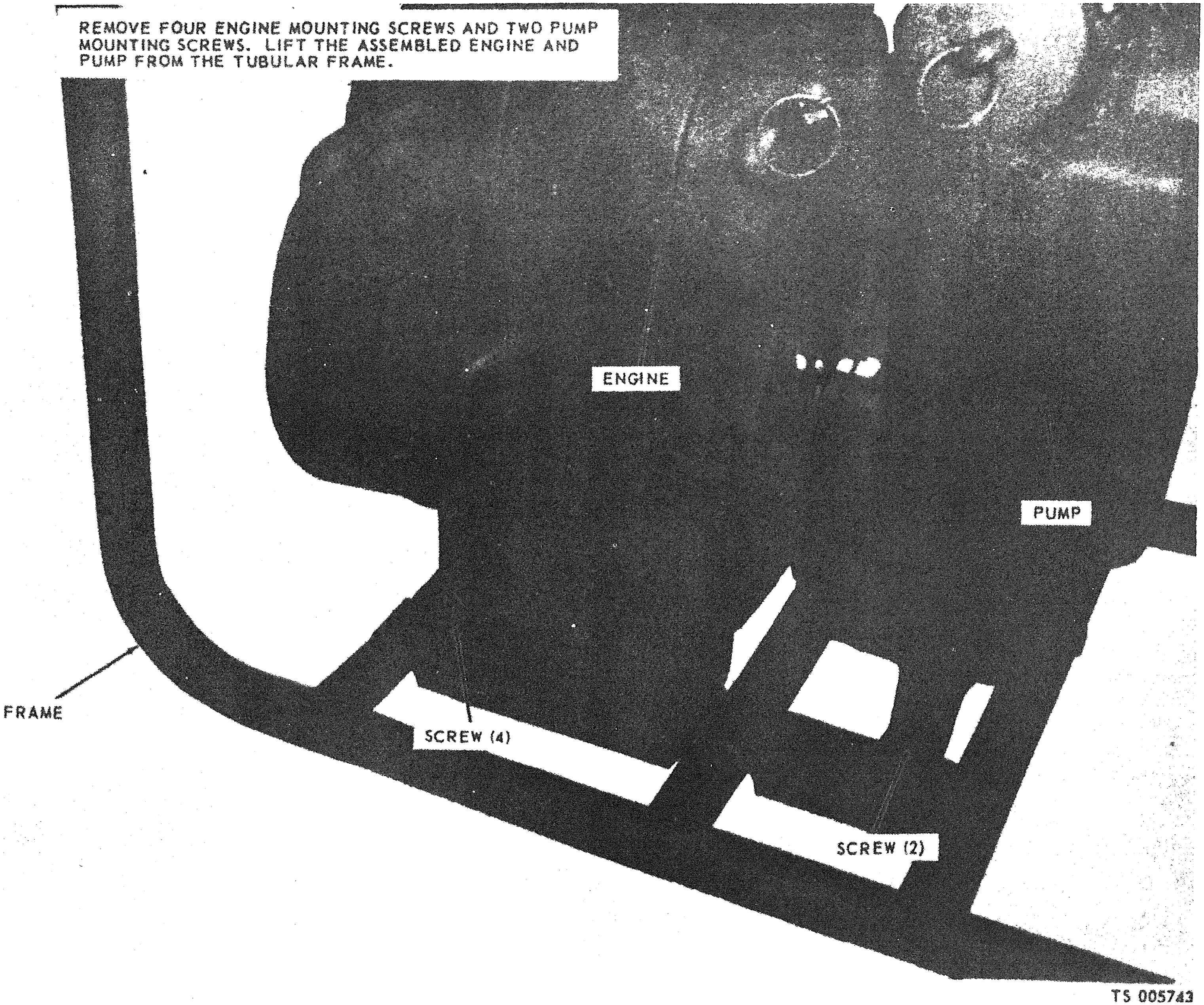
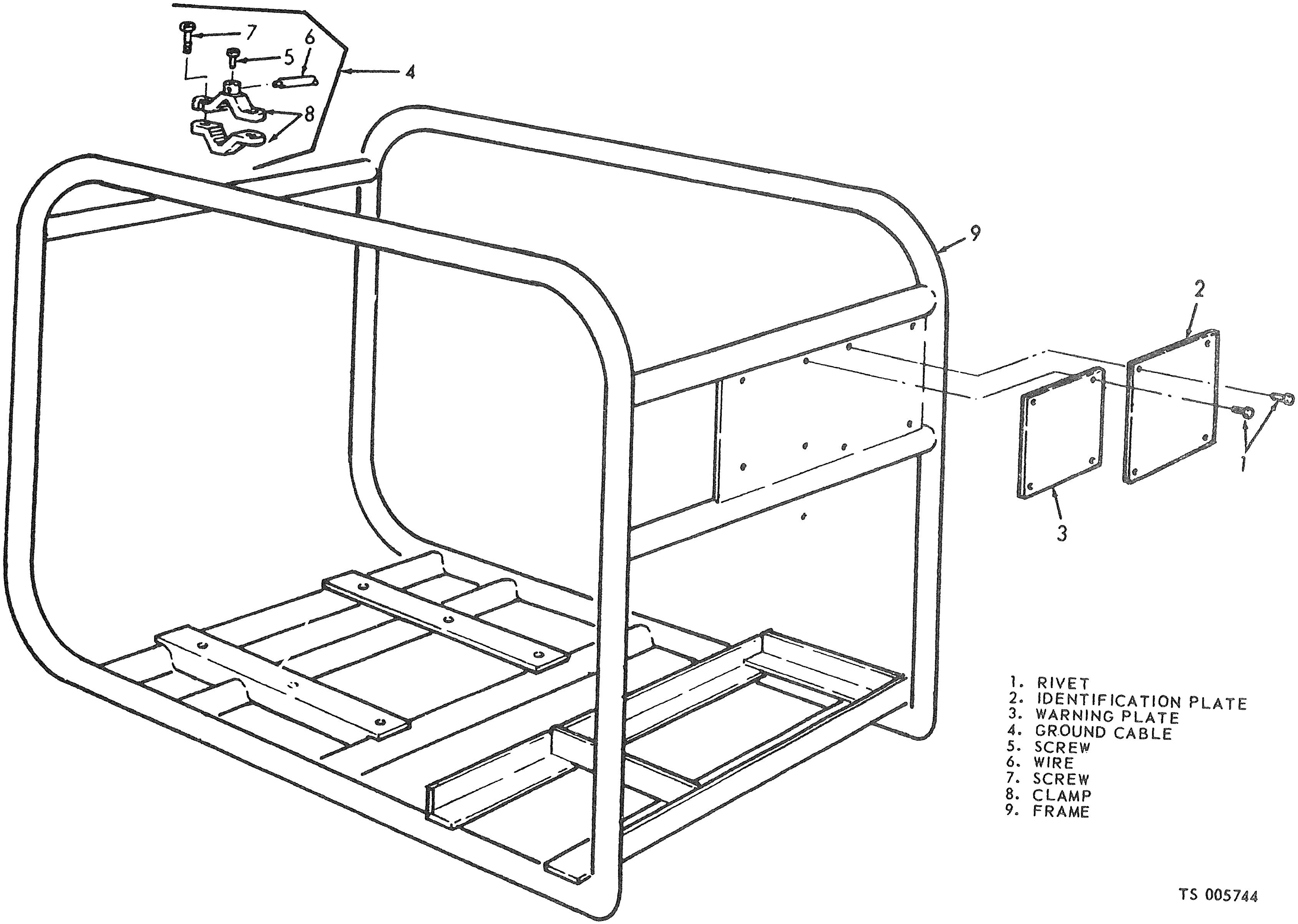
Figure 4–5. Engine assembly, removal and installation.



REMOVE FOUR ENGINE MOUNTING SCREWS AND TWO PUMP MOUNTING SCREWS. LIFT THE ASSEMBLED ENGINE AND PUMP FROM THE TUBULAR FRAME.

Figure 4-6. Engine and pump removal and installation.



1. RIVET
2. IDENTIFICATION PLATE
3. WARNING PLATE
4. GROUND CABLE
5. SCREW
6. WIRE
7. SCREW
8. CLAMP
9. FRAME

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Figure 4-7. Frame components, removal and installation.

CHAPTER 5

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

5-1. Special Tools and Equipment

No special tools or equipment are required by Direct and General Support Maintenance personnel for maintaining the pump assembly.

5-2. Maintenance Repair Parts

Repair parts and equipment are listed and illustrated in the Repair Parts and Special Tools List in Appendix C of this manual and in TM 5-2805-257-24P.

Section II. DIRECT AND GENERAL SUPPORT TROUBLESHOOTING

For troubleshooting information, useful in locating and correcting unsatisfactory operation of the pump assembly, refer to paragraphs 4-12 and 4-13 of this manual. Additional troubleshooting information on the gasoline engine is contained in TM 5-2805-257-14.

Section III. GENERAL MAINTENANCE INSTRUCTIONS

5-3. General

a. This section provides general cleaning, inspecting, and repair instructions that are common to components of the pump assembly.

b. Special cleaning, inspection, and repair instructions applicable to any individual component is covered with the component in the applicable section of this manual.

5-4. General Cleaning Instructions

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F.-138°F.

a. Metal Parts.

(1) Prior to removal or disassembly of major components, remove excess oil or dirt with cleaning solvent (Fed Spec P-D-680) or steam clean.

(2) Use cleaning solvent (Fed Spec P-D-680) to clean parts as gears, housing, and hand packed bearings.

CAUTION

Do not immerse oil impregnated bearings or sealed bearings in cleaning solvent; clean with a solvent moistened cloth.

(3) Use brushes to clean irregular shaped surfaces; use wooden pegs to clean ports and orifices. Use a lint free cloth to wipe parts clean.

(4) Exercise care when handling machined and polished surfaces to avoid nicks, scratches, and other damage. Do not immerse more than one metal machined part in solvent at the same time unless such parts are separated or protected from contacting each other.

b. Electrical Components.

(1) Prior to removal or disassembly of electrical components, clean exterior by scraping off excess oil and dirt. Wipe clean with a lint free cloth dampened with cleaning solvent (Fed Spec P-D-680).

CAUTION

Do not immerse electrical components or devices in cleaning solvent.

(2) Clean armatures, coils, and solenoids with compressed air and wipe clean with a lint free cloth dampened in cleaning solvent.

CAUTION

Safety glasses must be used when cleaning parts with compressed air.

(3) Wipe electrical terminals clean with a lint free cloth dampened with cleaning solvent. Use a soldering iron to clean solder from terminals and connectors.

c. Gaskets, Seals, and O-Rings.

(1) Clean all old gasket particles from mating surface.

(2) Discard and replace all gaskets, seals, o-rings, and felt washers.

5-5. General Inspection Instructions

a. General. Perform an inspection on all parts as soon as possible after cleaning. Instructions for specific inspection procedures are included in the text at the point where the inspection must be performed.

b. Visual Inspection.

(1) Visually inspect all machined and polished areas. Use a strong light to shine across polished surfaces to inspect for scoring, cracks, breaks, or excessive wear.

(2) Visually inspect all gears for evidence of metal to metal abrasion, pitting, cracks, breaks chipped teeth, or excessive wear.

c. Electrical Parts.

(1) Visually inspect wiring harness and wiring for frayed edges or damaged insulation.

(2) Inspect all electrical parts such as solenoids, with power applied, to observe actual operation.

5-6. General Repair Instructions

a. Thread Repair. Use the proper size tapping tool to repair tapped holes. Discard and replace hardware that has defective threads.

b. Press-Fit Parts.

(1) Gears and bearings may require the use of a pneumatic or hand operated arbor press.

(2) Preheat all press-fit parts before assembly if specified. Use a lubricant, if necessary, to reduce abrasive action.

CAUTION

Do not press on the outer race of bearings when installing on shafts. Do not press on inner race of bearing when installing in a housing.

Section IV. REMOVAL AND INSTALLATION OF MAJOR COMPONENTS AND ASSEMBLIES

Information on the removal and installation of all major components is contained in Chapter 4 of this manual.

CHAPTER 6

REPAIR OF THE PUMP ASSEMBLY

Section I. CENTRIFUGAL PUMP

6–1. Pump Removal

Remove the pump as shown in figure 4–3.

6–2. Pump Disassembly

a. Pump components have been partially disassembled in the removal operation. Refer to figure 6–1 to complete the disassembly of the pump.

b. Remove dust cap (1, fig. 6–1), gasket (2), and coupling (3) from the pump housing. Remove dust cap (4), gasket (5), and coupling (6).

c. Remove plug (7), insert (8), and plug (9) from the pump housing (10).

d. Remove diffuser gasket (11), dowel pin (12), setscrew (13), and separate the wear ring (14) from the diffuser (15).

e. Disassemble the impeller by removing setscrew (16) and separate wear ring (17) from the impeller (18).

f. Remove gasket (19) from backhead (20).

g. Remove mechanical seal (21) from pump shaft (22). The pump shaft can be removed from the engine shaft with a three-fingered bearing puller.

6–3. Pump Cleaning, Inspection, and Repair

a. Cleaning.

WARNING

Dry cleaning solvent, P–D–680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F.–138° F. (38° C.–59° C.).

(1) Clean all parts with cleaning solvent (Fed Spec P–D–680) and dry thoroughly.

(2) Use probe to remove any obstructions in vane of the impeller.

b. Inspection. Inspect all parts for cracks, breaks, or any other damage.

c. Repair. Repair by replacement of defective parts.

6–4. Pump Reassembly

a. Replace pump shaft (22, fig. 6–1) on the engine shaft.

b. Oil the bore in backhead (20) and firmly install the mechanical seal (21). Install gasket (19) on the backhead.

c. Assemble wear ring (17) on impeller (18) and secure with setscrews (16).

d. Press wear ring (14) on diffuser (15) and secure with setscrew (13). Install dowel pin (12). Place sealer (11) on diffuser and insert the assembly into the pump housing. Make sure the dowel pin mates with the slot in the pump housing.

e. Insert gaskets (2 and 5) in couplings (3 and 6) and install the couplings on the housing.

f. Install filler plug (7), drain plug (9), and insert (8).

NOTE

The remaining pump components will be assembled when installing the pump.

6–5. Pump Installation

Refer to paragraph 4–19*e* and install the pump.

---

1 Dust cap
2 Gasket
3 Coupling
4 Dust cap
5 Gasket
6 Coupling
7 Plug
8 Insert
9 Plug
10 Housing
11 Gasket
12 Dowel pin
13 Setscrew
14 Wear ring
15 Diffuser
16 Setscrew
17 Wear ring
18 Impeller
19 Gasket
20 Backhead
21 Seal
22 Shaft
23 Key

Figure 6–1. Pump assembly, disassembly and reassembly.

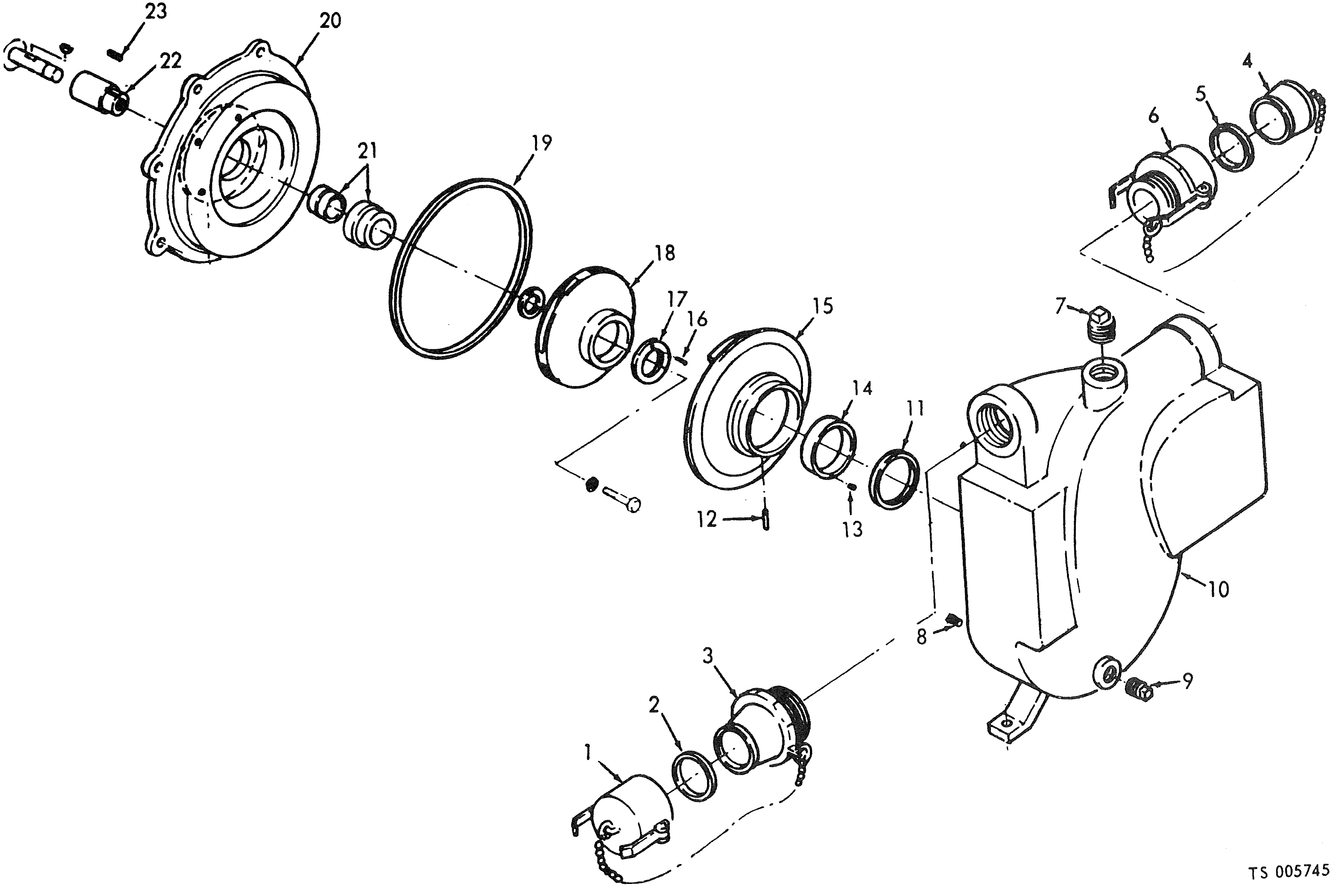

Figure 6-1. Pump assembly, disassembly and reassembly—Continued.

Section II. GASOLINE ENGINE

6-6. Engine Removal

Remove the engine per instructions in figure 4-5.

6-7. Engine Disassembly, Cleaning, Inspection, and Repair

Refer to TM 5-2805-257-14 for information on the disassembly, cleaning, inspection, and repair of the gasoline engine.

6-8. Engine Installation

Refer to figure 4-5 and install the gasoline engine.

Section III. FRAME

6-9. Frame Removal

Remove the components from the frame per instructions in paragraph 4-21*b*.

6-10. Frame Repair

Straighten any misalignment or bends in the frame. Weld any breaks or cracks.

6-11. Frame Installation

Install the frame components per instructions in paragraph 4-21*d*.

APPENDIX A

REFERENCES

A–1. Fire Protection

TB 5–4200–200–10	Hand Portable Fire Extinguishers Approved for Army Use

A–2. Lubrication

C9100–IL	Identification List for Fuels, Lubricants, Oils and Waxes

A–3. Painting

TM 9–213	Painting Instructions for Field Use

A–4. Radio Suppression

TM 11–483	Radio Interference Suppression

A–5. Maintenance

TM 5–2805–257–14	Operator, Organizational, Direct Support, General Support and Depot Maintenance Manual: Engine, Gasoline, 3 HP, Military Standard Models
TM 38–750	The Army Maintenance Management Systems

A–6. Shipment and Storage

TM 740–90–1	Administrative Storage of Equipment

A–7. Destruction to Prevent Enemy Use

TM 750–244–3	Procedures for Destruction of Equipment to Prevent Enemy Use

APPENDIX A-1

COMPONENTS OF END ITEMS LIST

SECTION I. INTRODUCTION

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1. Scope.

This appendix lists Integral Components of and Basic Issue Items (BII) for the pump assembly to help you inventory items required for safe and efficient operation.

2. General

The components of end item list are divided into the following sections:

a. Section II. Integral Components of the End Item. These items, when assembled, comprise the pump assembly and must accompany it whenever it is transferred or turned in. These illustrations will help you identify these items.

b. Section III. Basic Issue Items. These are minimum essential items required to place the pump assembly in operation, to operate it and to perform emergency repairs. Although shipped separately packed, they must accompany the pump assembly during operation and whenever it is transferred between accountable officers. The illustrations will assist you with hard-to-identify items. This manual is your authority to requisition replacement BII based on Table(s) of Organization and Equipment (TOE)/Modification Table of Organization and Equipment (MTOE) authorization of the end item.

3. Explanation of Columns

a. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown (if applicable).

(2) *Item number.* The number used to identify item called out in the illustration.

b. National Stock Number (NSN). Indicates the national stock number assigned to the end item which will be used for requisitioning.

c. Part Number (P/N). Indicates the primary number used by the manufacturer which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards and inspection requirements to identify an item or range of items.

d. Description. Indicates the federal item name and if required, a minimum description to identify the item.

e. Location. The physical location of each item listed is given in this column. The lists are designed to inventory all items in one area of the major item before moving on to an adjacent area.

f. Usable on Code. "Usable on" codes are included to help you identify which component items are used on the different models. Identification of the codes used in this list are:

Code	*Used on*

g. Quantity Required (Qty Reqd). This column lists the quantity of each item required for a complete major item.

h. Quantity. This column is left blank for use during inventory. Under the received column, list the quantity you actually receive on your major item. The date columns are for use when you inventory the major item at a later date, such as for shipment to another site.

Section II. INTEGRAL COMPONENTS OF END ITEM
Pump (for F.A.R.E.) (NSN 4320-00-427-0002)

(1) Illustration		(2)	(3)	(4)	(5)	(6)	(7)	(8) Quantity			
(a) Figure No.	(b) Item No.	National Stock number	Part No. & FSCM	Description	Location	Usable on code	Qty Reqd	Rcv'd	Date	Date	Date
C-1	1	4720-00-298-8927	MS28741-5-0360 (96906)	Hose, Assy, Fuel Line			1				
C-1	2	4730-00-231-5634	MS20822-5B (96906)	Elbow			1				
C-1	15	5340-00-914-7308	13212E3613 (97403)	Strap, Assy, Fuel Can			1				
C-1	16	7420-00-222-3088	132219E2670 (97403)	Can, Gasoline			1				
C-1	3	2910-00-066-1235	13211E7541	Adaptor, Assy, Fuel Can			1				
C-1	4	2910-00-066-1235	13211E7541	Adaptor, Assy, Fuel Can			1				
C-4	4	13219E3930 (97403)	Ground, Cable, Assy				1				

Section III. BASIC ISSUE ITEMS

(1) Illustration		(2)	(3)	(4)	(5)	(6)	(7)	(8) Quantity			
(a) Figure No.	(b) Item No.	National stock number	Part no. & FSCM	Description	Location	Usable on code	Qty Reqd	Rcv'd	Date	Date	Date
				TM 5-4320-256-14, Operator's, Organizational, Direct, and General Support Maintenance Manual.			1				

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. General

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component and the work measurement time required to perform the functions by the designated maintenance level. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III. (Not applicable).

d. Section IV contains supplemental instructions or explanatory notes for a particular maintenance function.

B-2. Explanation of Columns in Section II

a. Column (1), Group Number. A number is assigned to each group in a top down breakdown sequence. The applicable groups are listed on the MAC in disassembly sequence beginning with the first group removed.

b. Column (2), Functional Group. This column contains a brief description of the components of each numerical group.

c. Column (3), Maintenance Functions. This column lists the various maintenance functions (A through K). The lowest maintenance level authorized to perform these functions is indicated by a symbol in the appropriate column. Work measurement time standards (the active repair time required to perform the maintenance function) are shown directly below the symbol identifying the maintenance level. The symbol designations for the various maintenance levels are as follows:

C—Operator or crew
O—Organizational maintenance
F—Direct support maintenance
H—General support maintenance
D—Depot Maintenance.

The maintenance functions are defined as follows:

A. Inspect. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards through examination.

B. Test. To verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

C. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean, to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

D. Adjust. To maintain within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

E. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

F. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

G. Install. The act of emplacing, seating, or fixing into position an item, part, or module (component or assembly in a manner to allow the proper functioning of an equipment or system.

H. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

I. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remaching or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, modure (component or assembly), end item or system.

J. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publication. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

K. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army Equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.), considered in classifying Army equipment/components.

d. Column (4), Tools and Equipment. This column is provided for referencing by code the special tools and test equipment, (Sec III) required to perform the maintenace functions (Sec II).

e. Column (5). Remarks. This column is provided for referencing by code the remarks (Section IV) pertinent to the maintenance functions.

B-3. Explanation of Columns in Section IV

a. Reference Code. This column consists of two letters separated by a dash, entered from column (5), Section II. The first letter references the Remark and the second letter references a maintenance function, column (3), A through K, to with the remark applies.

b. Remarks. This column lists information pertinent to the maintenance function being performed, as indicated on the MAC Section II.

Section II. MAINTENANCE ALLOCATION CHART

(1)	(2)	(3) Maintenance functions											(4)	(5)
		A	B	C	D	E	F	G	H	I	J	K		
Group No.	Assembly group	Inspect	Test	Service	Adjust	Align	Calibrate	Install	Replace	Repair	Overhaul	Rebuild	Tools and Equipment	Remarks
03	FUEL SYSTEM													
	Fuel Lines	C	...	C	...	...	...	...	O					
		0.1	...	0.1	...	...	...	...	0.1					
	Fuel Tank	C	...	C	...	...	...	...	O					
		0.1	...	0.1	...	...	...	...	0.1					
	Fuel Tank Adapter	C	...	...	...	...	...	...	O	O				
		0.1	...	...	...	...	...	...	0.1	0.1				
02	PUMP ASSEMBLY	C	F	C	...	...	...	...	O	F	F	H		
		0.1	8.0	0.1	...	...	...	...	2.0	6.0	8.0	12.0		
	Shaft, Impeller, Seals, and Bearings	F	...	...	...	...	...	...	F	F	...	...	...	I-H
		0.1	...	...	...	...	...	...	2.0	4.0				
03	ENGINE ASSEMBLY	C	...	...	...	...	...	...	O	F	H	D		
		0.3	...	...	...	..	...	...	2.5	12.3	15.0	18.0		
	Spark Arrestor	C	...	...	...	...	...	...	O					
		0.1	...	...	...	...	...	...	0.1					
04	FRAME	O	...	...	...	...	...	...	O	F				
		0.2	...	...	...	...	...	...	2.0	2.0				

Section IV. REMARKS

Reference code	Remarks
I-H	Replace Seals

APPENDIX C
REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-1. Scope

This appendix lists repair parts, special tools, test, measurement, and diagnostic equipment (TMDE), and other support equipment required for operation and performance of organizational, direct support, and general support maintenance of the pump assembly.

C-2. General

a. Section II—Repair Parts List. A list of repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending numerical sequence, with the parts in each group listed in figure and item number sequence. Bulk materials are listed in FSN sequence, as the last group in Section II.

b. Section III—Special Tools List. (Not applicable).

c. Section IV—National Stock Number and Part Number Index. A list, in ascending numerical sequence of all National stock numbers appearing in the listings, followed by a list, in alphanumeric sequence, of all part numbers appearing in the listings. National stock number and part numbers are cross-referenced to each illustration figure and item number appearance.

C-3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings.

a. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number.* The number used to identify each item called out in the illustration.

b. Source, Maintenance, and Recoverability Codes (SMR).

(1) *Source code.* Source codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	*Definition*
PA	—Item procured and stocked for anticipated or known usage.
PB	—Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply systems.
PG	—Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD	—Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issue or outfittings. Not subject to automatic replenishment.
PE	—Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF	—Support equipment which will not be stocked but which will be centrally procured on demand.
PG	—Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD	—An item of a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
KF	—An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	—Item included in both a depot overhaul/repair kit and a mi maintenance kit.
MO	—Item to be manufactured or fabricated at organizational level.
MF	—Item to be manufactured or fabricated at the direct support maintenance level.
MH	—Item to be manufactured or fabricated at the general support maintenance level.
MD	—Item to be manufactured or fabricated at the depot maintenance level.
AO	—Item to be assembled at organizational level.
AF	—Item to be assembled at direct support maintenance level.
AH	—Item to be assembled at general support maintenance level.
AD	—Item to be assembled at depot maintenance level.
XA	—Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher ase assembly.
XB	—Item is not procured or stocked. If not available through salvage, requisition.
XD	—A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used a source of supply for any items source coded above except those coded XA or XD.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(*a*) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	*Application/Explanation*
C	—Crew or operator maintenance performed within organizational maintenance.
O	—Support item is removed, replaced, used at the organizational level.
I	—Support item is removed, replaced, used by the direct support element of integrated direct support maintenance.

Code *Application/Explanation*

F —Support item is removed, replaced, used at the direct support level.

H —Support item is removed, replaced, used at the general support level.

D —Support items that are removed, replaced, used at depot, mobile depot, specialized repair activity only.

NOTE

Codes "I" and "F" will be considered the same by direct support units.

(*b*) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code *Application/Explanation*

O —The lowest maintenance level capable of complete repair of the support item is the organizational level.

F —The lowest maintenance level capable of complete repair of the support item is the direct support level.

H —The lowest maintenance level capable of complete repair of the support item is the general support level.

D —The lowest maintenance level capable of complete repair of the support item is the depot level.

L —Repair restricted to designated specialized repair activity.

Z —Nonreparable. No repair is authorized.

B —No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this time.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability Codes *Definition*

Z —Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.

O —Reparable item. When uneconomically reparable, condemn and dispose at organizational level.

F —Reparable item. When uneconomically reparable, condemn and dispose at the direct support level.

H —Reparable Item. When uneconomically reparable, condemn and dispose at the general support level.

D —Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.

L —Reparable item. Repair, condemnation, and disposal not authorized below depot/specialized repair activity level.

A —Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

d. Part Number. Indicates the primary number used by the manufacturer which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

NOTE

When a stock numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.

c. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code listed in SB 708-12 which is used to identify the manunfacturer, distributor, or Government agency, etc.

f. Description. Indicates the Federal item name and, if required, a minimum description to identify the item. Items that are included in kits, and sets are listed below the name of the kit or set with the quantity of each item in the kit or set indicated in the quantity incorporated in unit column. When the part to be used differs between serial numbers of the same model, the effective serial numbers are shown as the last line of the description.

g. Unit of Measure (U/M). Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of that will satisfy the required units of measure will be requisitioned.

h. Quantity Incorporated in Unit. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable, (e.g., shims, spacers, etc.).

C-4. How to Locate Repair Parts

a. When National Stock Number or Part Number is Unknown:

(1) *First.* Using the table of contents, determine the functional group within which the repair part belongs. This is necessary since illustrations are prepared for functional groups, and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the functional group to which the repair part belongs.

(3) *Third.* Identify the repair part on the illustration and note the illustration figure and item number of the repair part.

(4) *Fourth.* Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National Stock Number or Parts Number is Known.

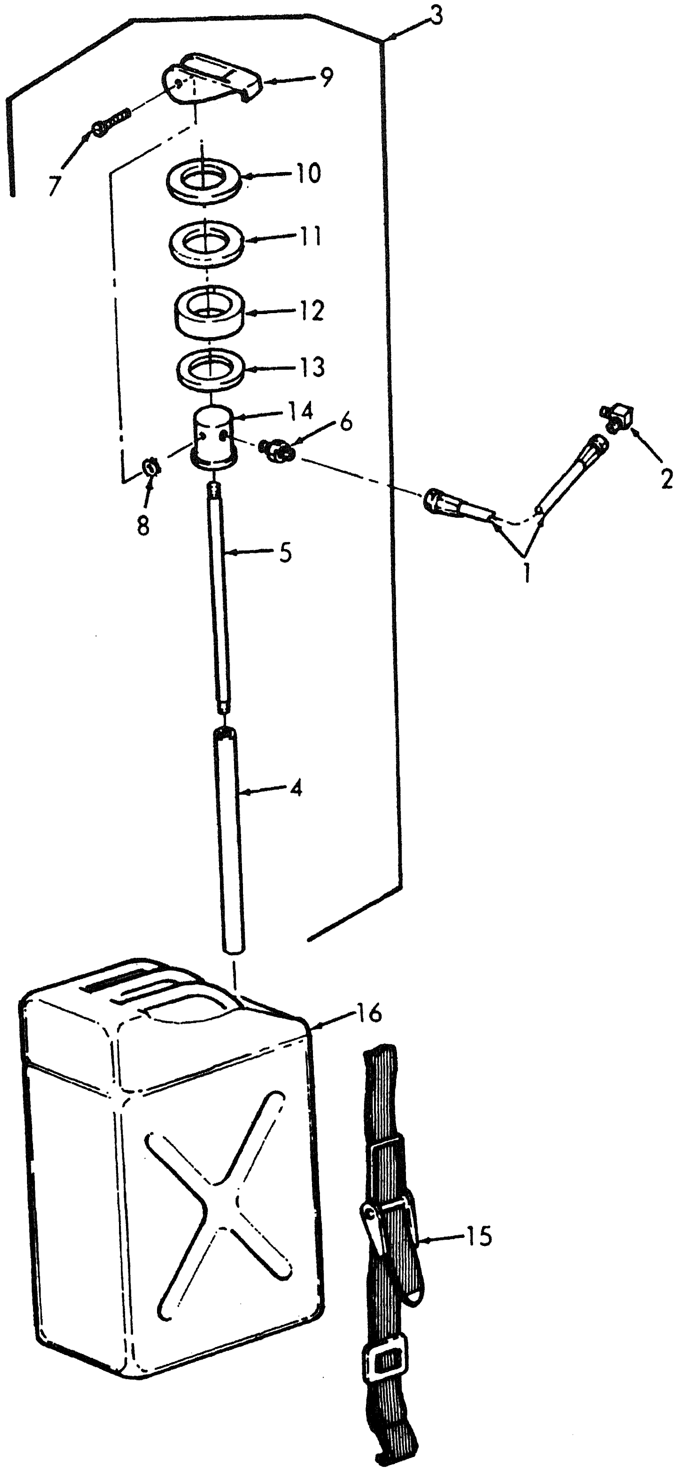
(1) *First.* Using the Index of Federal Stock Numbers and Part Numbers find the pertinent Federal stock number or part number. This index is in ascending FSN sequence followed by a list of part numbers in ascending alphanumeric sequence, cross-referenced to the illustration figure number and item number.

(2) Second. After finding the figure and item number, locate the figure and item number in the repair parts list.

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)		(7)	(8)
(a) FIG NO	(b) ITEM NO	SMR CODE	NATIONAL STOCK NUMBER	FSCM	PART NUMBER	DESCRIPTION	USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 01 FUEL SYSTEM			
C-1	1	PAOZZ		96906	MS28741-5-0360	HOSE ASSEMBLY DETACHABLE END FITTING MEDIUM PRESSURE 5-16 OD TUBE X 1-4 ID HOSE X 36 INCHES LONG FUEL TANK TO ENGINE........		EA	1
C-1	2	PAOZZ	4730-00-231-5634	96906	MS20822-58	ELBOW,PIPE TO TUBE 90 DEGREE 5-16 TUBE OD X 1-8 NPT X 1-2 20 UNF 3A COP ALY FUEL LIN TO ENGINE............................		EA	1
C-1	3	PAOOO	2910-00-066-1235	97403	13211E7541	ADAPTER ASSEMBLY FUEL DRUM....................................		EA	1
C-1	4	PAOZZ	4710-00-597-8731	97403	13211E7542	PIPE,EXTENSION MATERIAL RED BRASS,ASTM B43....................		EA	1
C-1	5	PBOZZ	4710-00-185-6948	97403	13211E7543	PIPE,BRASS RED BRASS ASTM43 15 11-16 LONG .540 OD .082 WALL THREAD BOTH END 1-4 18 NPT....................................		EA	7
C-1	6	PAOZZ	4730-00-277-5115	88044	AN816-5-4	ADAPTER,STRAIGHT,PIPE FLARED TUBE AND PIPE THREAD 5-16 TUBE OD X 1-4 ANPT X 1-2 20 UNF 3A STEEL...........................		EA	1
C-1	7	PAOZZ		97403	13211E7545	SCREW,SHOULDER..		EA	2
C-1	8	PAOZZ	5310-00-209-1239	96906	MS35335-60	WASHER,LOCK FLAT EXTERNAL TOOTH NUMBER 10 NOM SIZE CRES PSVT...		EA	2
C-1	9	PAOZZ	3740-00-902-1481	97403	13200E6363	CLAMP,STRAINER RUBBER,SYNTHETIC...............................		EA	1
C-1	10	PAOZZ	5310-00-571-5090	97403	13200E6361	WASHER,STEEL STEEL,ASTM A366A569..............................		EA	1
C-1	11	PAOZZ	5310-00-408-2561	97403	13211E7547	WASHER,FLAT...		EA	1
C-1	12	PAOZZ	5365-00-402-5125	13211	13211E7546	RING,SEALING..		EA	1
C-1	13	PAOZZ	5310-00-566-9502	97403	13211E7544	WASHER,BRASS BRASS,HIGH LEADED ASTM B21 COPPER ALLOY NUMBER 356,HARD..		EA	1
C-1	14	PAOZZ	3740-00-902-1479	97403	13211E7548	HEAD,SPRAYER INSECT...		EA	1
C-1	15	PAOZZ	5340-00-914-7303	97403	13212E3613	STRAP,WEBBING TIE DOWN,FUEL CAN...............................		EA	1
C-1	16	PAOZZ	7240-00-222-3088	97403	13219E2670	CAN,GASOLINE FIVE GALLON......................................		EA	1
						GROUP 02 PUMP ASSEMBLY			
C-2	1	PAOZZ	5340-00-823-5318	96906	MS27028-11	COUPLING HALF QUICK DISCONNECT CAM-LOCKING TYPE,CAP,DUST,TYPE 9 CL 1 SIZE 2 AL ALY ANDZ.................................		EA	1
C-2	2	PAOZZ	5310-00-612-2414	96906	MS27030-6	GASKET QUICK DISCONNECT,CAM-LOCKING TYPE 2 NOM SIZE...........		EA	2
C-2	3	PAOZZ	4730-00-938-7997	96906	MS27022-11	COUPLING HALF,QUICK DISCONNECT CAM-LOCKING TYPE,MALE,EXTERNAL PIPE THREAD,TYPE 3 CL 1 SIZE 2AL ALY ANDZ..................		EA	1
C-2	4	PAOZZ	4730-00-915-5127	96906	MS27029-11	COUPLING HALF QUICK DISCONNECT CAM-LOCKING TYPE,PLUG,DUST,TYPE 10 CL 1 SIZE 2 AL ALY ANDZ................................		EA	1
C-2	5	PAOZZ	4730-00-088-9285	96906	MS27026-11	COUPLING HALF QUICK DISCONNECT................................		EA	1
C-2	6	PAOZZ	5310-00-732-0558	96906	MS51967-8	NUT,PLAIN,HEXAGON CARBON STEEL,CADMIUM PLATED,UNC 2B 3-8 16GRB PUMP TC FRAME..		EA	2
C-2	7	PAOZZ	5310-00-637-9541	96906	MS35338-46	WASHER,LOCK...		EA	2
C-2	8	PAOOZ	5305-00-269-3214	96906	MS90725-64	SCREW,CAP,HEXAGON STEEL GRADE 5,CADMIUM PLATED,UNC 2A 3-8 16 X 1.500 LONG PUMP TO FRAME..................................		EA	2
C-2	9	PAOZZ	5306-00-225-9088	96906	MS90726-33	BOLT,MACHINE STEEL,GRADE 5,CADMIUM PLATED UFN 2A 5-16 24 X .875 LONG INTERMEDIATE TO ENGINE................................		EA	4
C-2	10	PAOZZ	5310-00-407-9566	96906	MS35338-45	WASHER,LOCK HELICAL,REGULAR MEDIUM SERIES 5-16 NOM SIZE CS CD PLD INTEMEDIATE MOUNTING.................................		EA	4
C-2	11	PAOFH	4320-00-564-9061	97403	13219E3949	PUMP ASSEMBLY CENTRIFUGAL 100 GPM.............................		EA	1
C-2	12	PAOZZ	4730-00-188-3515	96906	MS20913-4	PLUG,PIPE SQUARE HEAD,PUMP DRAIN,1-2 INCH NPT................		EA	1
C-2	13	PAOZZ	4730-00-287-2182	96906	MS20913-8	PLUG,SQUARE,HEAD PUMP PRIMING,1 INCH NPT.....................		EA	2
C-2	14	PAOZZ	5305-00-269-2802	96906	MS90726-59	SCREW,CAP,HEXAGON INTERMEDIATE TO CASING STEEL,GRADE 5,CADMIUM PLATED,UNF-2A,3-8-24 X .875 LONG..........................		EA	8
C-2	15	PAOZZ	5340-00-291-3492	96906	MS124698	INSERT,SCREW THREAD COIL HOUSING PUMP.........................		EA	8

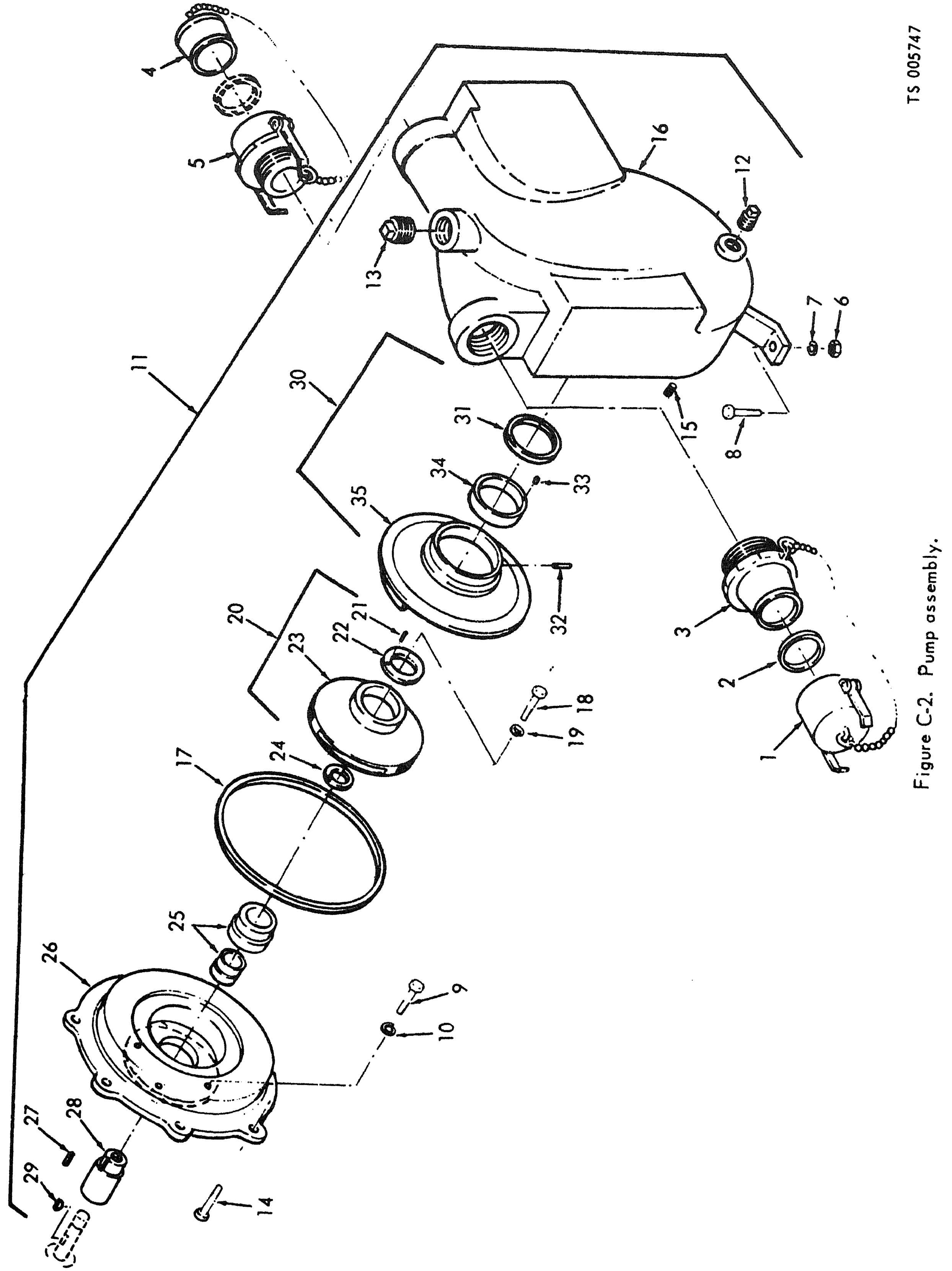
(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
C-2	16	PAOZZ	4320-00-559-1516	97403	13219E3948	HOUSING,PUMP	EA	1
C-2	17	PAOZZ	5330-00-291-3272	96936	MS29513-270	PACKING PREFORMED HYDROCARBON FUEL RESISTANT,"O" RING .139 DIA CROSS SECTION X 8	EA	1
C-2	18	PAOZZ	5306-00-225-9089	96906	MS90726-34	BOLT,MACHINE IMPELLER MOUNTING STEEL,GRADE 5,CADMIUM PLATED,UNF 2A 5-16-24 X 1.000 LONG	EA	1
C-2	19	PAOZZ	4320-00-559-1518	97403	13219E3937	WASHER,IMPELLER CRES.AISI 416	EA	1
C-2	20	PAOOZ	4320-00-559-1517	97403	13219E3941	IMPELLER ASSEMBLY	EA	1
C-2	21	PBOZZ	5305-00-281-3118	96906	MS51021-32	SETSCREW WEAR RING MOUNTING,8-32 UNC 2A X 1-4 IN	EA	2
C-2	22	PAOZZ		97403	13219E3939	RING,WEAR IMPELLER	EA	1
C-2	23	PAOZZ		97403	13219E3940	IMPELLER	EA	1
C-2	24	PAOZZ		97403	13219E3938	SHIM,IMPELLER PHOSPHOR BRONZE Q Q-B750 COMP A	EA	1
C-2	25	PAOOZ	5330-01-017-8352	97403	13219E3942	SEAL,SHAFT	EA	1
C-2	26	XAOZZ		97403	13219E3944	BACKHEAD INTERMEDIATE AL ALLOY Q Q 601-356T6	EA	1
C-2	27	PAOZZ		96906	MS20066-141	KEY,MACHINE IMPELLER MOUNTING SQUARE IN CROSS SECTION,BOTH ENDS SQUARE 3-16 X 3-16 X 3-4 LONG CRES GR A,PSVT	EA	1
C-2	28	PAOZZ	4320-00-559-1520	97403	13219E3943	SHAFT,STUB CRES AISI 416	EA	1
C-2	29	PAOZZ	5315-00-043-1787	96906	MS35756-34	KEY,WOODRUFF STEEL,ALLOY,WITH KEYWAY AND KEY SLOT DIMENSIONS 3-16 X 5-8 NOM SIZE ENGINE SHAFT MOUNTING	EA	1
C-2	30	PAOOZ		97403	13219E3947	DIFFUSER ASSEMBLY	EA	1
C-2	31	PAFZZ	8030-00-081-2331	81349	MILS22473	SEALING COMPOUND GRADE CV	CO	V
C-2	32	PAOZZ	5315-00-851-2516	96906	MS9389-55	PIN STRAIGHT DIFFUSER MOUNTING,1/8 INCH DIA X 3-8 INCH LONG	EA	1
C-2	33	PAOZZ	5305-00-281-3118	96906	MS51021-32	SETSCREW RING CASE WEAR MOUNTING,8-32 UNC X 1-4 LONG	EA	2
C-2	34	PBOZZ	4320-00-559-1519	97403	13219E3945	RING,CASE WEAR	EA	1
C-2	35	XAOZZ		97403	13219E3946	DIFFUSER	EA	1
						GROUP 03 ENGINE ASSEMBLY		
C-3	1	PAOZZ	2990-00-176-9298	97403	13217E9484	ARRESTOR SPARK EXHAUST INTERNAL COMBUSTION ENGINE	EA	1
		PAOZZ		96906	MS35842-12	CLAMP,HOSE LOW PRESSURE,TYPE F	EA	1
C-3	2	PAOZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON CARBON STEEL,CADMIUM PLATED,UNC 2B 1-4 20 GRB EXHAUST PIPE TO ENGINE	EA	2
C-3	3	PAOZZ	5310-00-582-5965	96906	MS35338-44	WASHER,LOCK HELICAL,REGULAR MEDIUM SERIES 1-4 NOM SIZE CS CD PLD ENGINE TO SUPPORT AND EXHAUST PIPE	EA	14
C-3	4	PAOZZ	5305-00-225-3839	96906	MS90725-8	SCREW,CAP,HEXAGON STEEL GRADE 5,CADMIUM PLATED,2A 1-4 20 X 1.000 LONG EXHAUST PIPE TO ENGINE	EA	2
C-3	5	PAOZZ	2990-00-557-7112	97403	13219E3933	PIPE EXHAUST	EA	1
C-3	6	PAOZZ	5330-00-797-3506	97403	9786E50-2	GASKET	EA	1
C-3	7	PAOZZ	5305-00-068-0501	96906	MS90725-5	SCREW,CAP,HEXAGON STEEL GRADE 5,CADMIUM PLATED,UNC 2A 1-4 20 X .625 LONG ENGINE TO SUPPORT	EA	12
C-3	8	PAFHH	2805-01-169-1100	97403	2A016-4	ENGINE,GASOLINE INDUSTRIAL TYPE 4CYCLE 3 NET CONTINOUS HP MODEL NO 2A016-3	EA	1
						GROUP 04 FRAME		
C-4	1	PAOZZ	5320-00-242-1581	96906	MS20470A6-5	RIVET,SOLID	EA	8
C-4	2	XAOZZ		97403	13219E3931	PLATE,IDENTIFICATION SHALL BE IN ACCORDANCE WITH MIL-P-514 NAME PLATE	EA	1

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	FEDERAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	U/M	QTY INC IN UNIT
C-4	3	XBOZZ		13219E3926	97403	PLATE,WARNING MATERIAL IN ACCORDANCE WITH MIL-P514,TYPE 3, COMPOSITION A CL 2,0.020 STK	EA	1
C-4	4	PAOCO	6150-00-483-3918	13219E3930	97403	CABLE ASSEMBLY,POWER	EA	1
C-4	5	PAOZZ	5305-00-954-9530	MS35214-80	96906	SCREW,MACHINE PAN HEAD,CROSS RECESSED,BRASS BLACK OXIDE,UNC 2A 5-16 18 X 3-8 LONG	EA	2
C-4	6	MCOOZ		JC95TYPEAVACLASS 4	81348	WIRE,ELECTRICAL MFG FM 6145-00-189-6695	FT	6
C-4	7	PAOZZ	5305-00-954-9525	MS35214-75	96906	SCREW,MACHINE CROSS RECESSED,BRASS,BLACK OXIDE,1-4-20 UNC 2A X 1 1-2 IN LG	EA	4
C-4	8	PAOZZ	5975-01-016-0880	13219E3929	97403	CLAMP,GROUNDING SIZE 1-2 TO 1 INCH	EA	2
C-4	9	PAOZZ	5310-00-880-7744	MS51967-5	96906	NUT,PLAIN,HEXAGON CARBON STEEL,CADMIUM PLATED,UNC 2B 5-16 18 GRB ENGINE SUPPORT TO FRAME	EA	4
C-4	10	PAOZZ	5310-00-407-9566	MS35338-45	96906	WASHER,LOCK INTERMEDIATE MOUNTING,5-16 IN	EA	4
C-4	11	PAOZZ	5306-00-225-8499	MS90725-34	96906	BOLT,MACHINE STEEL GRADE 5,CADMIUM PLATED UNC 2A 5-16 18 X 1.000 LONG ENGINE SUPPORT TO FRAME	EA	4
C-4	12	PBOZZ	2990-00-563-6359	13219E3936	97403	SUPPORT,ENGINE STEEL HRS AISI C1020	EA	2
C-4	13	PGOFF	2990-00-563-6382	13219E3932	97403	FRAME ASSEMBLY PUMP AND ENGINE MOUNTING	EA	1
						GROUP 05 BULK MATERIAL		
		PAOZZ	6145-00-189-6695	FFDSRECJC95TYPEA VACLASS4	81348	CABLE IMPREGNATED ASBESTOS AND VARNISHED CAMBRIC ASBESTOS BRAID INSULATED 6AWG UNIT PACKAGE BULK 50 FT ROLL	FT	6



TS 005746

Figure C-1. Fuel system.



TS 005747

Figure C-2. Pump assembly.

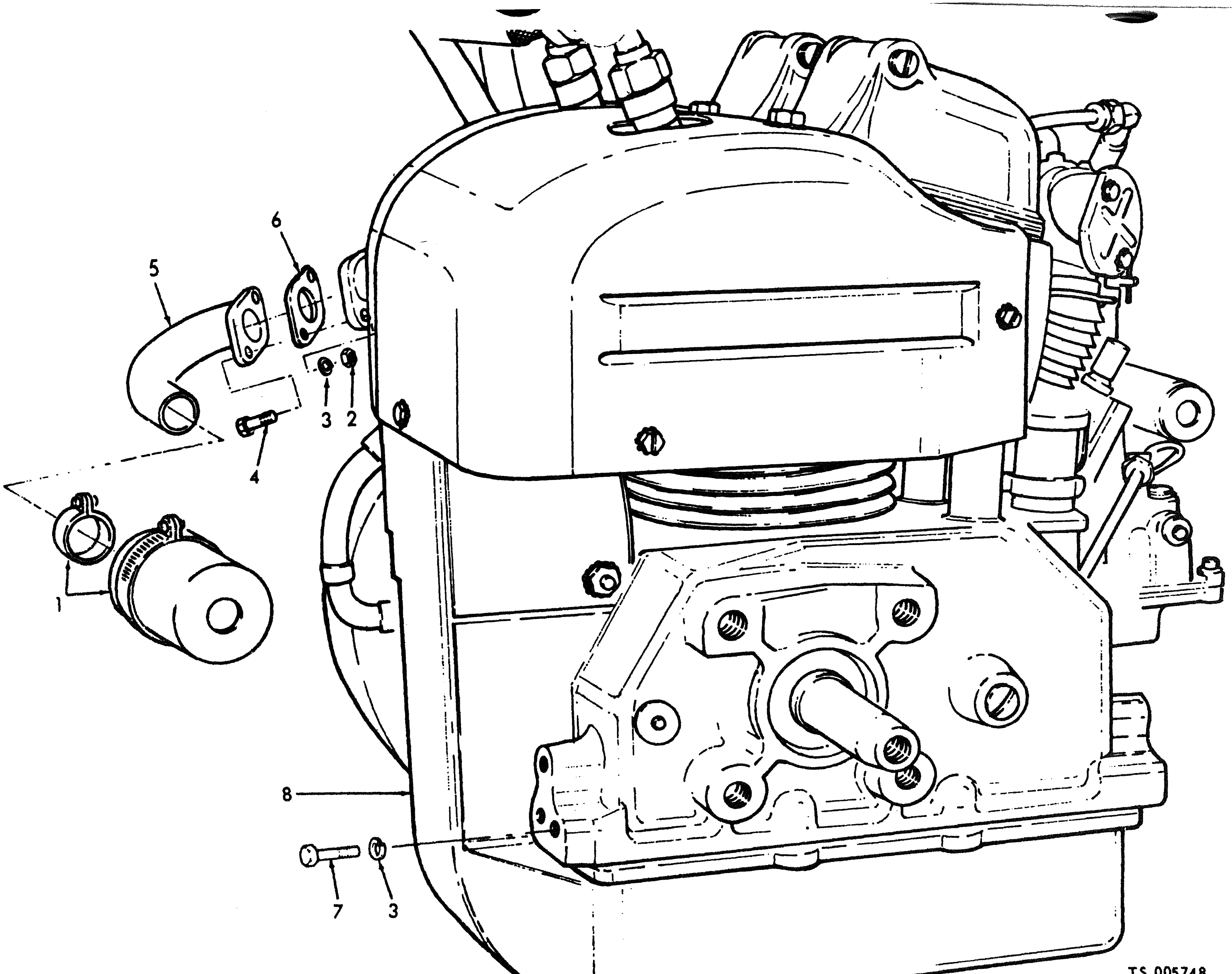


Figure C-3. Engine assembly.

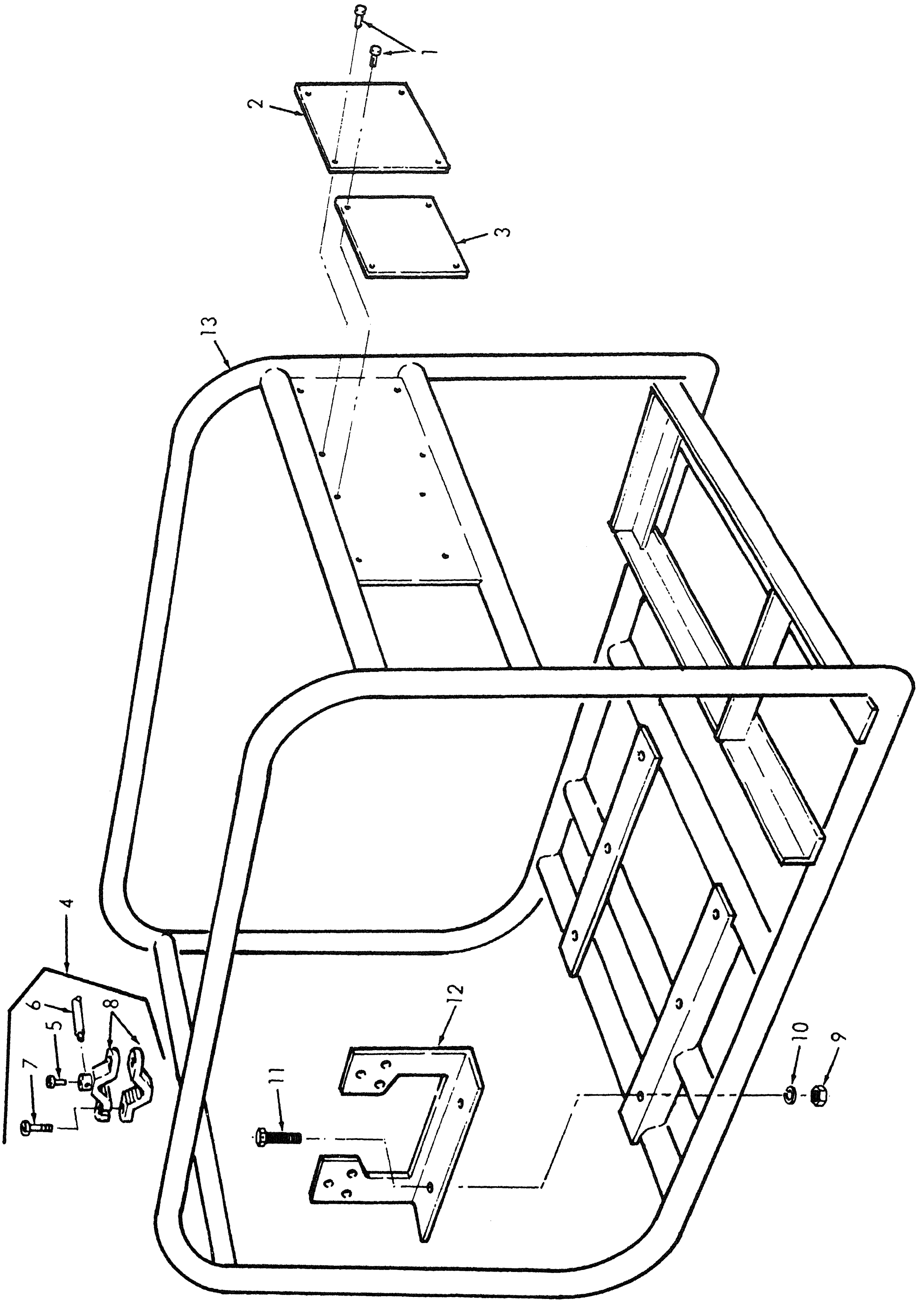


Figure C-4. Frame.

STOCK NUMBER	FIGURE NO.	ITEM NO.
5315-00-043-1787	C-2	29
2910-00-066-1235	C-1	3
5305-00-068-0501	C-3	7
2805-00-072-4871	C-3	8
8030-00-081-2331	C-2	31
4730-00-088-9285	C-2	5
2990-00-176-9298	C-3	1
4710-00-185-6948	C-1	5
4730-00-188-3515	C-2	12
6145-00-189-6695		
5310-00-209-1239	C-1	8
7240-00-222-3088	C-1	16
5305-00-225-3839	C-3	4
5306-00-225-8499	C-4	11
5306-00-225-9088	C-2	9
5306-00-225-9089	C-2	18
4730-00-231-5634	C-1	2
5320-00-242-1581	C-4	1
5305-00-269-2802	C-2	14
5305-00-269-3214	C-2	8
4730-00-277-5115	C-1	6
5305-00-281-3118	C-2	21
5305-00-281-3118	C-2	33
4730-00-287-2182	C-2	13
5330-00-291-3272	C-2	17
5340-00-291-3492	C-2	15
5365-00-402-5125	C-1	12
5310-00-407-9566	C-2	10
5310-00-407-9566	C-4	10
5310-00-408-2561	C-1	11
6150-00-483-3918	C-4	4

STOCK NUMBER	FIGURE NO.	ITEM NO.
2990-00-557-7112	C-3	5
4320-00-559-1516	C-2	16
4320-00-559-1517	C-2	20
4320-00-559-1518	C-2	19
4320-00-559-1519	C-2	34
4320-00-559-1520	C-2	28
2990-00-563-6359	C-4	12
2990-00-563-6382	C-4	13
4320-00-564-9061	C-2	11
5310-00-566-9502	C-1	13
5310-00-571-5090	C-1	10
5310-00-582-5965	C-3	3
4710-00-597-8731	C-1	4
5310-00-612-2414	C-2	2
5310-00-637-9541	C-2	7
5310-00-732-0558	C-2	6
5310-00-761-6882	C-3	2
5330-00-797-3506	C-3	6
5340-00-823-5318	C-2	1
5315-00-851-2516	C-2	32
5310-00-880-7744	C-4	9
3740-00-902-1479	C-1	14
3740-00-902-1481	C-1	9
5340-00-914-7303	C-1	15
4730-00-915-5127	C-2	4
4730-00-938-7997	C-2	3
5305-00-954-9525	C-4	7
5305-00-954-9530	C-4	5
5975-01-016-0880	C-4	8
5330-01-017-8352	C-2	25

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
AN816-5-4	88044	C-1	6
FFDSRECJC95TYPEAVACLASS4	81348		
JC95TYPEAVACLASS4	81348	C-4	6
MILS22473	81349	C-2	31
MS124698	96906	C-2	15
MS20066-141	96906	C-2	27
MS20470A6-5	96906	C-4	1
MS20822-5B	96906	C-1	2
MS20913-4	96906	C-2	12
MS20913-8	96906	C-2	13
MS27022-11	96906	C-2	3
MS27026-11	96906	C-2	5
MS27028-11	96906	C-2	1
MS27029-11	96906	C-2	4
MS27030-6	96906	C-2	2
MS28741-5-0360	96906	C-1	1
MS29513-270	96936	C-2	17
MS35214-75	96906	C-4	7
MS35214-80	96906	C-4	5
MS35335-60	96906	C-1	8
MS35338-44	96906	C-3	3
MS35338-45	96906	C-2	10
MS35338-45	96906	C-4	10
MS35338-46	96906	C-2	7
MS35756-34	96906	C-2	29
MS51021-32	96906	C-2	21
MS51021-32	96906	C-2	33
MS51967-2	96906	C-3	2
MS51967-5	96906	C-4	9
MS51967-8	96906	C-2	6
MS90725-34	96906	C-4	11
MS90725-5	96906	C-3	7
MS90725-64	96906	C-2	8
MS90725-8	96906	C-3	4
MS90726-33	96906	C-2	9
MS90726-34	96906	C-2	18
MS90726-59	96906	C-2	14

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
MS9389-55	96906	C-2	32
13200E6361	97403	C-1	10
13200E6363	97403	C-1	9
13211E7541	97403	C-1	3
13211E7542	97403	C-1	4
13211E7543	97403	C-1	5
13211E7544	97403	C-1	13
13211E7545	97403	C-1	7
13211E7546	13211	C-1	12
13211E7547	97403	C-1	11
13211E7548	97403	C-1	14
13212E3613	97403	C-1	15
13217E9484	97403	C-3	1
13219E2670	97403	C-1	16
13219E3926	97403	C-4	3
13219E3929	97403	C-4	8
13219E3930	97403	C-4	4
13219E3931	97403	C-4	2
13219E3932	97403	C-4	13
13219E3933	97403	C-3	5
13219E3936	97403	C-4	12
13219E3937	97403	C-2	19
13219E3938	97403	C-2	24
13219E3939	97403	C-2	22
13219E3940	97403	C-2	23
13219E3941	97403	C-2	20
13219E3942	97403	C-2	25
13219E3943	97403	C-2	28
13219E3944	97403	C-2	26
13219E3945	97403	C-2	34
13219E3946	97403	C-2	35
13219E3947	97403	C-2	30
13219E3948	97403	C-2	16
13219E3949	97403	C-2	11
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9787E3	97403	C-3	8

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